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ANTHONY'S  
**Photographic Bulletin.**

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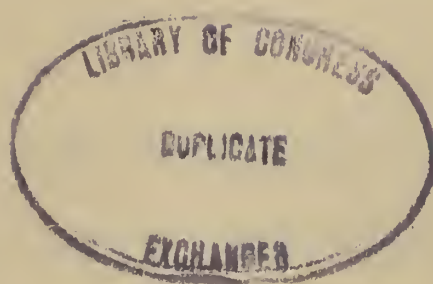
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1886.

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Prof. CHARLES F. CHANDLER, Ph.D., LL.D., Editor  
ARTHUR H. ELLIOTT, Ph.D., F.C.S., Associate Editor.

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INSTANTANEOUS PHOTOGRAPHS BY

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NEGATIVE ON THE STANLEY DRY PLATE.

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# ANTHONY'S Photographic Bulletin.

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Prof. CHARLES F. CHANDLER, Ph.D., LL.D., *Editor.*

ARTHUR H. ELLIOTT, Ph.D., F.C.S., *Associate Editor.*

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JANUARY 9, 1886.

Vol. XVII.—No. 1.

## VICTOR SCHUMANN AND SPECTRUM PHOTOGRAPHY.

FROM the busy whirl of American life it is well to stop sometimes and take a glance at the work of those patient men who are toiling along in the higher regions of scientific work with no other stimulus than the love of research. Among these painstaking workers, Germany furnishes the brightest examples in such men as Vogel, Eder, Schumann, Belitski, Stolze and a number of others. In the domain of spectrum photography no one has done more enduring work than Engineer Victor Schumann, of Leipzig. We have before us a number of his wonderful spectrum photographs, and the beauty of the work accomplished surpasses anything we have yet seen. Some months ago he sent us an account of his work upon the spectrum of the gas nitrogen. The apparatus consisted of a set of seven prisms, each prism in two parts. These were made of right and left-handed quartz with angles of  $30^\circ$ . Speaking of the selection of the pieces to compose these, Schumann says: "The composition of a faultless apparatus, which I need for this purpose—particularly the procuring of the fourteen prisms of  $30^\circ$ , whose planes have to be absolutely true—has deprived me for months of all spare time."

With the above apparatus he succeeded in proving that the bands of the nitrogen spectrum can be continued to the cadmium line No. 25, and that these bands can be resolved into sharp lines by the use of the above quartz prisms; and he obtained photographs of them. To give an idea of the delicate photographic work necessary to obtain these results, we would say that with one quartz prism one nitrogen band has a width of only  $\frac{1}{3}$  of a millimeter (about  $\frac{1}{75}$  of an inch), which, with the aid of the seven double prisms, is resolved into twelve lines. Schumann remarks that each of these latter lines "possesses the character of a band." Two silver prints kindly sent to us by Herr Schumann bear eloquent testimony to the delicacy of his work, as well as the wonderful power of his quartz spectroscope. The original photographs of the nitrogen spectrum are only about  $\frac{8}{10}$  of an inch long, and consist of three bright bands from the region between the cadmium lines Nos. 9 and 10. These bands are pretty sharp towards the red end of the prismatic scale, but gradually fringe off on the violet side. An enlargement of these under the microscope (to a length of  $5\frac{9}{10}$  inches) reveals the remarkable fact that the fringed bands consist of line groups of three lines each, a fact unknown until demonstrated by Victor Schumann. Following up this line of research, Schumann applied his beautiful apparatus to the solar spectrum. To

give an idea of the resolving power of this remarkable instrument, he sent us two proofs of his solar spectrum photographs, which show twice as many lines in the ultra-violet region as those produced by the celebrated physicist Cornu. For instance, in the space between the Fraunhofer lines,  $\lambda$  3943 and  $\lambda$  3947, Cornu's views show only seven lines, while those of Schumann exhibit as many as fifteen lines in this region of the solar spectrum.

The beauty of the photographic work, the great clearness and fine definition in the lines, Herr Schumann attributes to the use of cyanin as a sensitizer in his gelatine plates. He says: "It is astonishing how the coloring matter has a favorable influence, even in small quantities. Such fine and clear spectra as these upon cyanin gelatine, none of the existing photographic plates will furnish."

Herr Schumann further says: "But the cyanin has to be applied correctly to insure success, and requires much more care than has generally been considered heretofore." Cyanin dissolved in water gives discordant results, and an alcoholic solution (undiluted) works much more certainly. In the same letter Herr Schumann also discusses the importance of silver iodide in the gelatine plates used for this spectrum photography, and says: "Plates which contain a *small* quantity of highly sensitive silver iodide beside the silver bromide can be brilliantly developed with Stolze's potash developer as modified by Dr. Eder; and can be intensified with the latter's sulphate of iron alum solution in a manner to satisfy the most scrupulous spectrum photographer."

In concluding this interesting letter to us, he gives the following axioms to insure success in the beautiful field of work he has entered.

Every one should:

- 1st. Make his own plates and use gelatine emulsion only.
- 2d. Always use silver iodide (silver iodide and bromide precipitated together).
- 3d. For solar photography color the emulsion with cyanin.
- 4th. Develop with the potash developer.

We have lately received a short note from Herr Schumann, in which he says that he has succeeded in producing a gelatine plate that is as sensitive to orange and yellow light as it is to blue and violet, and consequently has a high sensitiveness for white light. In the spectrum diagrams sent, with sunlight and long exposure, there is a pretty uniform sensitiveness from the red to the violet. With short exposure only orange, yellow and the blue and violet parts act, and the green is without effect. These plates are so sensitive to orange rays that the light of a petroleum lamp, with red glass chimney, is sufficient to act upon them. These plates appear well suited to orthochromatic photography.

We have thus endeavored to give our readers an idea of the work of a man who is laboring in the promised land of photography, and paving the way, slowly, but surely, to the realization of photography in natural colors. These patient researches among the wonderful ether waves will ultimately wrest from them the secret of their power; make them respond to the dictates of the mind of man; and, at his bidding, reproduce those glorious hues that nature spreads broadcast before our eyes in such evanescent forms.

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*All communications for the columns of the BULLETIN should reach us on Monday preceding the day of issue, to insure their publication at that time.*



## EDITORIAL NOTES.

THE Committee appointed by the Photographic Merchants' Board of Trade to arrange for the Annual Meeting, have met and have perfected arrangements for the Board to meet at the Metropolitan Hotel, Broadway, New York, on Tuesday, February 9th. The Committee of Arrangements are V. M. WILCOX, *Chairman*; W. Irving Adams; Edward Cope.

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SOME time last summer, a party wrote to a New York house for a photograph of "Professor Hoodlum jumping from the Brooklyn Bridge, and a policeman arresting him," when half way down.

And now a party inquires for a photograph of a man committing suicide by jumping off Niagara Falls.

We know of no such picture, but would suggest to would-be suicides that they adopt this mode of execution, and notify one or another of the excellent photographers there, that they may make the method of taking themselves off of benefit to somebody in the world. In this way one man's death will make another man's living.

We throw out the suggestion for what it may be worth.

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THE *Philadelphia Photographer* will in future be issued twice a month, and the office will be in New York. Dr. Wilson has given up his other photographic work, and will devote himself to the literature of the art. We welcome him to New York, and hope many good things from his neighborly feeling.

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THE Minneapolis Amateur Photographic Club has recently been somewhat exercised over the suggestion of a local newspaper that they should admit ladies into their club. Why not? We think the idea a good one. Ladies' society has always a refining influence, and in art matters they are often an inspiration to work when all else fails.

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WE are indebted to Mr. J. S. Johnson, of New York, for an excellent view of the English cutter *Genesta*. Also for two views of the crews that sailed the *Puritan* and *Genesta* in their famous race last summer. The view of the *Genesta* is one of the best of moderate size that we have seen; while the pictures of the crews are very interesting and thoroughly well done.

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ONE of the latest novelties in the way of small cameras is one that can be concealed in the vest. It takes care of itself almost, and is ready for a series of exposures at any moment. It consists of a flat case carried in the vest in front, and is almost entirely concealed, the lens looking like a large button. For description see Report of the Society of Amateur Photographers of New York.

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WANTED.—A photograph of these post holes.

A gentleman in Eastman suggests that the artesian well be taken up, cut into sections, and sold for post holes, in order to reimburse the town for the money expended upon it.—*Eastman (Ga.) Journal*.

A CINCINNATI friend sends us the following from a local journal, which is endeavoring to impart valuable information through its agricultural editor.

"Please explain the meaning of the term 'equivalent focus,' now used so much in describing the lens of a photograph camera.

"CINCINNATI, December 26.

"SUBSCRIBER."

[ANS.—Neither can we 'find the term in any dictionary,' but we believe it is the 'swing back' arrangement of the camera, necessary in photographing architectural subjects, to prevent vertical lines converging in the picture.—AG. ED.]

WHAT degree of enterprise is expected, by the rural mind, on the part of dealers in photographs, may be gathered from the following *literatum et spellatim* letter, the original of which we have had the pleasure of seeing.

If the "kings and queens and duks," will all send their photographs, we will see that they are forwarded to the proper quarter.

Mr ———

i wish to git the pictuars of all the kings and queens and duks of each nashon

i wish to hav them life sice or what is so called

i want them with thare kingtom dress

i want them for senery

if you can firnish me them let me know what the expence will bee

Mich

i wish to hav them so i can know them whare thay belong each won thair nashon

THE President and his Ministers went, the other day, to be photographed in a group.

The cards were doubtless cabinet size.—*Life*.

### C. D. FREDERICKS AND HIS WORK.

ONE of the most beautiful and interesting places to visit in New York City, is the grand establishment of this well-known and enterprising photographer, at the corner of Ninth street and Broadway. Stepping immediately from the sidewalk, one enters the magnificent gallery, containing some of the finest specimens of photographic portraiture. These comprise life-size portraits taken direct, together with crayon and pastel work of the best description. All give evidence of great photographic skill and artistic taste. And this artistic taste is not alone confined to the production of pictures; but the whole air of the place is artistic. The walls of the building are handsomely finished in solid relief decorations of a most costly character. It is evident that Mr. Fredericks has expended a large amount of money to make the surroundings of his work reflect his good taste and artistic feeling. This large expenditure of money shows the enterprising spirit of one who is among the oldest of New York's photographers. It will probably prove interesting to our readers to know something of the early history of a man whose every step in life has been well taken, and marked by a spirit of perseverance and indomitable energy. The following facts are gleaned from an article published in *Humphrey's Photographic Journal* in the year 1869.

Mr. C. D. Fredericks was born in New York City in the year 1823. He was sent at an early age to Havana, by his father, to learn the Spanish language, which afterward proved of great service to him. The panic of 1837 swept away his father's fortune, and young Fredericks entered a banking-house in Wall street, to gain a living and a knowledge of business, and this cut short his college studies. In 1843 he received glowing accounts of good business prospects in Venezuela from his brother, who resided there. He determined to try his fortune, and with a stock of goods suited to the country, and \$400, his entire fortune at the time, he set sail for Angostura on the Orinoco. As something to fall back upon in case of business failure, he took lessons in daguerreotyping from Mr. J. Gurney, and carried with him an outfit. On his arrival at Angostura, the customs officers, who knew nothing of the value of his daguerreotype outfit, undertook to fleece him by demanding heavy duties. Fredericks resented this and determined to ship the traps back to New York. While looking after the shipment of his merchandise to San Fernando, a child of the gentleman whose guest he was, died. On hearing of the difficulties at the custom-house, this gentleman, without the knowledge of Fredericks, paid the duties on his outfit, and taking the whole affair to his guest's room, requested him to make a portrait of his dead child. Although somewhat diffident as to his ability to succeed, the young daguerreotypist made a trial. A daguerreotype had never been seen in the place, and very few had heard of the invention. Great interest was exhibited in the operation, and a crowd assembled to see it done. The picture was a success, and as a result our young friend made \$4,000 in three weeks. He shipped his other merchandise to his brother and determined to travel with "that machine." With a new stock of materials from New York, he visited the islands of Tobago and St. Vincent, the province of Rio Negro, went up the Orinoco and down the Amazon. These journeyings were filled with adventures and romantic incidents; but the result was a breaking down of Mr. Fredericks' health and his return to New York. Nevertheless the love of adventure and the prospects of gain took our friend back to Para the following year. Here he established a gallery for six months, and then went to Marinharn, in both places meeting with good fortune. After a flying visit to New York, he returned to Pernambuco, visited Bahia, Rio Janeiro, Rio Grande and Porto Allegre. He crossed the province of Rio Grande, using ox-carts as a means of transportation, and taking portraits *en route*. In this trip he was paid by the poorer classes in horses, so that at his journey's end he had an immense drove of them, which he sold for cash. In his travels he met Boupland, the naturalist, and companion of Humboldt, and they journeyed together to Montevideo and Buenos Ayres. After staying in the latter places about a year, he embarked for New York with a view of proceeding to Paris to open an American gallery, the French being behind the Americans in the daguerreotype art. He reached Paris in 1853, and was the first to make life-size heads and employ artists to finish them in pastel. After six months he concluded that this style of portraiture was suited to American tastes, and determined to establish himself in New York. He arrived here in 1853 and entered into partnership with Mr. J. Gurney. This partnership, which had been very successful, was dissolved in 1855, and Mr. Fredericks established his gallery on Broadway, opposite the Metropolitan Hotel. In 1857 he sent some of his artists to Havana, and



established a gallery there. Among the artists Mr. Fredericks has introduced to America are Constant Mayer, Job Vernet, Piot, Wust, Santain, Nehlig, Majesky, Gerhard, Louvrier, Herlich, Schultz, Aubert, and others.

He occupied the galleries opposite the Metropolitan Hotel for twenty years, and when they were destroyed by fire he fitted up at his present place. He now occupies four stories and a basement in one building, and the two upper stories of the one adjoining. There are two sky lights—one on the first floor, used for ordinary portraiture; and another on the floor above, used for full-length figures, groups and so forth. The dressing-rooms for both ladies and gentlemen are beautifully fitted with every comfort and convenience, while the operating-rooms are arranged to produce the best effects with the greatest rapidity and least inconvenience to the sitters. The developing-room is a marvel of completeness and convenient arrangement. When we remember that Mr. Fredericks takes as many as one hundred and seventy pictures in a day, and at this time of the year, our readers can understand that everything must move like clockwork to insure the success that is evident from an inspection of the work of this great establishment. It is probable that this is the largest photographic enterprise in America, and it reflects great credit upon its veteran founder, who, together with his son and a corps of attentive employees, are reaping the rewards of courtesy, energy and perseverance.

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### A PLEA FOR ARTISTIC PHOTOGRAPHY.

BY P. H. M.

THE ever-increasing army of amateur photographers may always be divided into several classes, according to the tastes for the different branches of the art-science. Some in their practice, at the very outset, will jump at conclusions and “snap-shutter” right and left, light and dark, everything that comes along. An occasional good negative by this process the first season is more the result of a happy accident than any mature thought given the subject. With dozens of spoiled plates, or poor, thin, weak negatives, the young amateur goes clear to the other extreme—slow plates and long exposures. Now surely some good will come out of honest effort. The emulsion upon the glass requires time. A shady nook, with babbling brook, is sought, and the view, pretty to the eye, is carefully focused. The cap is removed and eight, ten, fifteen, seconds noted—plenty long enough—before it is replaced. Several other like exposures are made and the development begun. The “high lights” make their appearance and gain in intensity; in fact they get entirely too intense before a sufficient amount of detail comes out in the shadows. However, we try our best, and on bringing the negative, well fixed, to the light, we find, what? That the gentle zephyr, which so pleasantly fanned our cheeks during the exposure of the plate, had moved the foliage just enough to entirely remove the beauty of the picture as a photograph. Consequently, more spoiled plates at this end of the line.

It is an unfortunate fact that the time of the average amateur is not entirely his own; that he cannot choose his days of outing. But it is certain that one good negative made under favorable circumstances, however long may be the waiting for those circumstances, will more than offset a dozen poor ones, and the points therefrom will be more satisfactory both to his friends and himself. And right

here I would advocate the use of quick plates entirely, not only for the many known advantages that they possess over the slower ones, but that I have failed to find that they lack, as we have been told, any of the brilliancy of the latter.

Another class of amateurs are those who use the process for the purpose of scientific research in its many branches, and its usefulness in these is almost unlimited.

But it is the desire of the writer in this article to increase that number of thoughtful workers who delight to produce and appreciate a photograph artistic in all its effects. It is beyond my power or province to even attempt to discuss the question of whether photography is an art, but I do love to see a photo that has some resemblance or conforms to artistic rule. That such results can be obtained by study is acknowledged. Many amateurs who have had no particular liking for a good picture, after a season or two of just such experiences as are above enumerated, often find themselves lingering over fine engravings or excellent paintings with almost an analytical eye. The high character and beautiful execution of the illustrations in our periodicals of to-day, scattered broadcast over the land, should be sufficient to give one many a good idea with regard to selection of subject, both in grouping and landscapes. The artistic introduction of figures in the latter, or the well-arranged group, requires thought, and in the works of renowned artists, both on wood or steel and in colors, we have abundance of example by which to profit in lighting, posing or properly balancing and supporting our pictures. These same principles are manifest in the hundreds of little gems that have found their way in every household in the land during the past holiday season, in the shape of Christmas or New Year's cards.

But some will say: "We can't make photographs like these; they are the work of imagination." Granted. Yet many an amateur in looking them over will recollect that in his travels with the camera he has seen bits of nature bearing a close resemblance. He readily understands now wherein, in many ways, he could have bettered his photographs. The piece of roadway with the little bridge, or that old hut on the hill side with the rustic gateway, were not made from the right point of view.

These are some of the ways in which we may improve our pictures, other than in the production of a clear, sharp negative or a brilliant print. Let us try and give our work more thought and study before exposure, thereby elevating it to an artistic level, always remembering that "what is worth doing at all, is worth doing well."



### LIGHT AS A RECORDING AGENT OF THE PAST.

BY W. JEROME HARRISON.

It is a wonderful thought that every action which has occurred on this sun-lit earth of ours—or, indeed, for that matter, anywhere within the illuminated universe—is permanently recorded by the action of light, and is *at this moment* visible somewhere in space, if any eye could be there placed to receive the wave of light. Light, proceeding from the sun, falls upon objects on the earth, and is in part reflected by these to other objects, in part reflected outwards, passing through our atmosphere and thence still onwards, we know not whither or how far, in ever-widening waves through the ether.

The velocity with which these light-waves travel is almost inconceivable—186,000 miles per second; but if we could travel away from the earth with a speed *exceeding* this, then we should clearly *catch up* or overtake wave after wave of light, and as we received their impact upon the retinae of our eyes, the facts which these waves record would become visible, one by one, each in their proper turn in chronological sequence.

Strange, indeed, would be the results of such a voyage. Old men would see themselves as they were in middle age, in youth; while withered crones might view with regret their whilom lithe and lovely forms.

Still speeding away from our orb, which would now be visible only as a star, we should pass in review the lives of our parents and ancestors. History would unfold to us a truly living page. We should only have to continue the journey long enough to see Waterloo and Trafalgar fought out before our eyes; we should learn the truth as to the vaunted beauty of the Queen of Scots; and the exact landing place of Julius Cæsar on the shores of Britain would no longer be a mystery. If we had the curiosity to ascertain by ocular demonstration the truth of the Darwinian theory, a still more extended flight would disclose the missing link, if such existed, by which man passed from an arboreal fruit-eating, ape-like creature to a reasoning omnivora.

One curious fact would be, that all these events would be seen and would appear to happen *backwards*, or in the reversed order of their actual occurrence. We should overtake first the rays recording the end of any transaction, then those of the *middle*, and lastly, we should have revealed the *cause*, the beginning of the fact. Thus we should see Charles I head roll on the scaffold, then the executioner's ax would fall, while lastly the dethroned monarch would be seen to mount the scaffold.

In battles we should first witness the warrior's fall, and then behold the blow that caused his overthrow. The kiss would precede the struggle for it; and the marriage would come to our knowledge before the wooing.

But, seriously, it may well be a terrible thought that such a record of our actions undoubtedly exists. Photographers can imagine the possibility of the presence of some exquisitely sensitive surface on the bounds of space on which such waves of light might be received, and the impressions permanently retained. There would be no appeal against a record which revealed, photographically, the history of our lives. The very idea should stimulate us to do nothing that would not bear *development*, and exhibition to the gaze of mankind.

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### THE MAGIC LANTERN AND ITS APPLICATIONS.\*

BY L. H. LAUDY, PH.D.

IF we divide our senses into four integral parts, we at once find that by far the most important is that of sight. The sense of touch extends to objects only within our reach; that of smell must be close to us; and of hearing the limit is small for the loudest sound to reach us.

Seeing is eminently far in advance of all our senses, and by its means the external world is communicated to the internal brain through the medium of the

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\* The above paper is from a lecture before the Photographic Section of the American Institute, amplified by the author.



optic nerve; and, subjectively, impressions are thus produced from the retinal images, which are reflections of external objects brought within the field of view. It is privileged to extend far beyond the limits of this little world and to view the immensity of the starry universe.

The unaided eye sees but little of creative power, for there is a world hidden from our view which would have remained unknown had not modern science discovered the microscope and revealed this land of minute forms.

Such was the globe of water, magnifying the objects in distorted forms, till in the hands of science it sprung into that exquisite refinement of optical knowledge, the microscope.

The kaleidoscope was long regarded as a wonder and toy, until in practical hands it has been made to yield important geometric designs, which are used to ornament our walls and floors.

So likewise was the camera obscura of Baptista Porta, till the progress of chemical knowledge discovered the means of fixing its fleeting shadows.

And then, the magic lantern, which was to be found in every complete lilliputian warehouse, was only regarded as a pleasing optical toy, till, in the course of time, its practical value was discovered, and it has now become a useful instrument in applied science.

Among all the subjects to which science has been applied, it must be universally admitted there is none more important than optics.

It is to one branch alone that I ask your attention this evening, the formation of images by means of lenses, and in this connection I will try and tell you something about the magic lantern.

It will be necessary to make a digression here, and tell you something of the little historical knowledge we have on the subject.

In looking over the old Dutch and Latin books, at times mention is made of the magic lantern or lanthorn. A definition in an old Latin dictionary is a small optical instrument which, by a small gloomy light, shows monsters so hideous that those not in the secret believed them to be performed by magic art.

Another book speaks of a majick lanthorn, which, when used in an obscure place, produces many hideous shapes.

One is soon convinced that the early history of the magic lantern is very uncertain, and many ingenious antiquaries, finding the want of authentic records, have endeavored to supply the deficiency by conjecture founded on casual and obscure allusion to ancient writers, and have invented many vague and unsatisfactory answers, that upon investigation are found to be without foundation.

Magic is derived from "Mag," a surname of Zoroaster, the legislator and prophet of the ancient Bactrians, whose system of religion was the national faith of Persia.

These priests, or "magi," of the old Persian fire-worshippers were a superior class, and by the populace were supposed to be on close terms of intercommunication with disembodied spirits, by whose aid many of their scientific wonders were accomplished. They were in exclusive possession of scientific knowledge, and so celebrated were they in astrology and enchantment, that the name magic was given to all kinds of enchanters, and hence they were called magicians. Some of the different forms which the belief in magic has assumed are known

under different names. For example: "Amulet" is an ornamental gem-scroll worn as a remedy or preservative against evils or mischief, as disease or witchcraft, and generally inscribed with mystic forms or characters. "Auguries:" the art or practice of foretelling events by observing the actions of birds, or other phenomena. "Divination:" the act of foretelling future events, or discovering things secret or obscure, by the aid of superior beings, or by other than human means. "Incantation:" the process of using certain formulas of words and ceremonies for the purpose of raising spirits or performing other magical actions. "Witchcraft:" intercourse with evil spirits; power more than natural. "Alchemy:" a science which aimed to transmute base metals into gold, and to find the panacea or elixir of life. "Astrology:" the science of the stars, and foretelling events by their position and aspects.

I give the above as modifications of the idea conveyed by the word "magic."

It is highly probable that the mode of producing images by an apparatus similar to that of the magic lantern was early discovered, and was used by men who claimed occult powers in producing those appearances which may have been deemed supernatural by the ignorant of all ages. Dr. Thomas Young asserts that Friar Roger Bacon invented and used a magic lantern in 1252. This was most probably some arrangement of concave mirrors, which the ancients were familiar with.

In the Latin book ("*Ars Magna Lucis et Umræ*") published in the middle of the XVII century (1640) by Kircher, a description of a magic lantern is given used by him at the Jesuits' College in Rome. The apparatus was large and imperfect, and the paintings of the roughest style of art.

From ancient authors we may conjecture that the first optical illusion employed was the throwing of spectral images of living persons and other objects upon the smoke of burning incense by means of concave metal mirrors. Spectral images, by reflection of moving objects, were described in the XIV and XVI centuries.

The existence of a camera at the latter date is a fact, for the instrument is described by Baptista Porta, the Neapolitan philosopher, in his "*Magia Naturalis*" in 1558, and the doubt how magic lantern effects could have been produced in the XIV century, when the lantern itself is alleged to have been invented by Athanasius Kircher in the middle of the XVI century, is set at rest by the fact that glass lenses were constructed in Porta's time.

Roger Bacon, about 1260, speaks of glass lenses so well made as to give good telescopic and microscopic effects.

To seek for more sober or better authenticated information among historians, so far as it has been my fortune to discover, would, nevertheless, be a hopeless and unavailing pursuit; little more is to be gathered than an occasional reference, or rather a compilation of statements already made.

Luminous projections have for past years been a convenient means of illustrating lectures. This system of teaching has been brought to a high state of perfection and is now used in all our large colleges to illustrate every scientific subject. The truth is held "that what is seen is much better known and remembered than that which is only heard." Advantage has been taken of this, and it is now an established fact that information which can be imparted by the eye and ear at the same time, and conveyed to the brain, will remain more firmly



fixed than a mere statement of facts. The truth is, that many exhibitions at the present day depend more upon the magic lantern projections than upon the lectures, and without its valuable aid would lose all interest and fail to convey a proper impression. It is the eye and sense of impression that are excited, and the hearing in most cases is an after thought.

Some lecturers appear as very accomplished travelers, when, in reality, all their information is taken from well written guide-books. This wonderful impetus has been due to two causes. First, and most important, is the achievement of photography in producing, expeditiously, positives upon glass, which has indefinitely increased its application. Second, is the better mechanical and optical arrangement of the lantern, which have carried it to a high degree of perfection, together with a practical source of artificial illumination making it possible to project pictures fifty feet in diameter. And it has been so simplified that it comes within the reach of all, and can be used in parlor or hall, and becomes a valuable auxiliary to the teacher or public lecturer.

The fact of the great value of this method of instruction is so well recognized, that New York State alone has appropriated the liberal amount of \$18,000 annually for this purpose. This amount is distributed among the eight Normal Colleges of the State.

We will now consider the construction of the magic lantern. The instrument is very simple; it consists essentially of three principal parts—the source of light; the condensers; and a system of magnifying lenses.

The sources of light that have been used are candles, vegetable and animal oils, petroleum, the oxy-calcium, oxy-hydrogen, magnesium, and electric lights.

In the cheaper forms of lantern used as toys, candles or oils can be the source of light. The better forms of lanterns are so arranged that refined petroleum (kerosene) can be burnt in one, two, or even three wicks. The one-wick lamp fails to produce satisfactory results, but the dual wicks give a light of good power, and of a color approaching whiteness. The disadvantage of the two wicks is, that a dark shadow is produced upon the screen, from the fact that the position of the wicks is such that they are not in the axis of the condenser. This objectionable feature has been entirely overcome by the use of a third wick, and is known as the "Triplexicon." The center wick falling in the optic axis entirely removes the dark shadow, and the light is much whiter and produces the best possible effects obtainable by means of an oil lamp.

The advantages of this method of illumination, while it is not so intense as some of the other sources mentioned above, is that it is much cheaper, and requires little, if any, skill to operate it.

When Dr. Hare, of the University of Pennsylvania, invented a blowpipe in which he could burn together the gases oxygen and hydrogen, he obtained a hitherto unknown heat. Lieutenant Drummond, an English army officer, took advantage of this intense source of heat to make a piece of the refractory substance quick-lime white hot, and thus obtained the well known Drummond or oxy-hydrogen light. This was first used as a source of light for engineering operations in the English army. Afterwards it soon found application in and has now become the best and most practical source of light for the lantern. The oxy-calcium is a slight modification of this, substituting coal gas under ordinary

house pressure, or alcohol, for the hydrogen gas. This produces a light much inferior to the above.

Magnesium in wire or ribbon has been used to some extent, but only for short intervals of time. It produces a very white and intense light, but the mechanical difficulties in the construction of a suitable lamp to supply the ribbon with a uniform motion, added to the objectionable feature that white fumes of magnesium oxide are produced, has excluded it from general use as a source of light.

In the matter of the electric arc-light few improvements have been made to fit it for use in the lantern. The difficulties are two: first, its irregularity or flickering propensities; and second, the want of a proper mechanical appliance to keep the light in the focus of the condenser. Attempts have been made to use the incandescent electric light, but owing to the fact that the intensity of the light is low, and the globe inclosing the carbon filament acts as a lens and produces at times a shadow on the screen, these attempts have met with little success. These difficulties may possibly be overcome. And this light, if it can be produced with a battery, has many advantages, and it is hoped that those experimenting in this field may meet with success.

*(To be continued.)*

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## INSTANTANEOUS PHOTOGRAPHY IN THE DARK.

BY H. G. P.

ABOUT ten years ago the journals discussed the subject of photography by means of the non-luminous, but extremely actinic, flame of burning sulphur. It occurred to me to obtain this flame by burning a mixture of nitrous oxide and the vapor of sulphide of carbon. The apparatus employed consisted of an iron cylinder holding compressed nitrous oxide, and a Wolffe's two-necked bottle containing about a pint of sulphide of carbon. Knowing the mixture of the two gases would be explosive, I constructed a safety burner, as I thought. The whole was connected in such a way that the nitrous oxide gas passed into the Wolffe's bottle near the bottom, and issued through the other neck mixed with the vapor of sulphide of carbon. It was thence conveyed by rubber tubing to the safety burner, where the mixed gases were to be ignited at the proper moment.

A negative was then placed in a printing frame, a collodion emulsion dry plate put in contact with it, the intention being to make a contact print.

I brought the frame from the dark room and threw my apron or laboratory coat over the Wolffe's bottle. My assistant turned on the nitrous oxide, and in a moment it bubbled through the sulphide of carbon. I then struck a match and applied it to the safety burner, holding the negative toward it.

I next threw a bucket of wash-water over my assistant, whose clothes were flaming, and then we both rapidly sought the lower part of the house, he with a bleeding nose.

The doors and windows of the laboratory were fortunately open at the time of the explosion, and when the sulphurous acid was sufficiently dissipated we re-entered it to take an account of stock. The Wolffe's bottle was shattered to pieces and the printing frame was found on the floor, face downward. These occurrences took place at night, and after the litter was cleared up the lights were

turned down and the picture frame was taken to the dark room and the plate was developed into an under-exposed positive.

In connection with the above, the following extract from "Mosaics" for 1885, page 27, may be read with interest: "The strong actinic light obtained by burning sulphuret of carbon mixed with nitrous vapor is produced very simply in an appliance gotten up by Mr. W. T. Jackman, in which the nitrous vapor passes on in [over?] the sulphuret contained in a special tube. This apparatus, which was invented by Messrs. Delachanal & Mermet, of Paris, is not free from danger in inexperienced hands, but the author has obtained great advantages from its use."

We may properly ask the reviewers of this process how many explosions an operator should survive before he becomes an experienced hand?

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### A CAMERA OF GOLD.

MESSRS. TIFFANY & Co., of Union Square, have just introduced a beautiful and unique piece of jewelry, in the shape of a camera which is modeled exactly after our publishers' No. 2 B equipment, made of solid 18-carat colored gold.

Its dimensions are one-half inch in every way.

The hinged ground glass, folding bed, rising and removable front and bellows of the 2 B equipment are all depicted perfectly in this exquisite little charm. Even the patent corners by which the ground glass is held in its frame, and the tripod screw are accurately shown.

The tube of the lens is made of platinum, while the lens itself is a moon-stone.

They are made in the form of watch charms, scarf pins, and Langtry chains for ladies' wear, and make a present which may appropriately be given to any person of either sex who is interested in photography.

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### ARGENTIC POSITIVE PLATES.

THESE are metallic dry plates for positives, recently perfected by the Phoenix Plate Company, and now being introduced into the market. They are really gelatine emulsion plates upon japanned metal, and give positive pictures at once, without the necessity of taking a negative. The specimens of work done upon these plates are uncommonly good, and if any one can handle them, which we are assured is true, there is a wide field for this new development of dry plate photography. Any ammonia developer can be used upon the plates, but the manufacturers say they can obtain better results and stronger by using a stock solution made up by them and used in conjunction with a pyro solution.

The formula given with the plates is as follows:

#### No. 1.

Pyro.....	1 ounce.
Water.....	12 ounces.
Citric acid.....	30 grains.

#### No. 2.

Phoenix stock solution.

To mix developer take four ounces of water, two drams of No. 1 and four drams of No. 2. No. 2 should be kept well corked when not in use.



This developer can be used while clear; but it gradually works slower, and it is best to use a fresh mixture each time.

These plates are about five times as quick as wet plates. The development should be stopped when the outlines are fully out.

The plates are fixed in the following bath:

Potassium cyanide.....	120 grains.
Water .....	10 ounces.

And should remain therein until all the bromide of silver is eliminated, taking care to guard them against white light. After fixing they must be washed well and dried at a gentle heat.

When dry, they are varnished with any good varnish suitable for positive or negative plates. A gentle heat should be used to prevent the varnish from chilling, and to give a brilliant surface.

The merits of this new invention are: 1—Plates of any degree of rapidity can be made, although only the slower brands are now made by the manufacturers to suit the present demands. 2—Instantaneous positive pictures can be made upon these plates with more beautiful effects and more full of detail than has hitherto been produced in positive plate work. 3—They do away with the positive bath. 4—Save time by having plates ready coated. 5—Entire elimination of pin-holes, stains and fog, every plate being guaranteed by the manufacturers.

In regard to time of exposure, inside, under the sky-light, they take about three seconds, and for landscape work one second or less according to the conditions of light, subject, etc. The time of development is about two minutes, while the fixing, drying and varnishing allows the picture to be finished within ten minutes after the commencement of operations. The manufacturers assure us that the leading characteristics of these plates are rapidity, cleanliness, permanency, reliability and simplicity. If the future proves the truth of these statements, these plates are destined to have a large sale among both professional and amateur photographers.

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#### OUR PICTURE GALLERY.

THE contributions to this department of the BULLETIN have arrived in large numbers since we last had an opportunity to review them. These donations from our friends and subscribers are always interesting to us, and afford us much pleasure in their inspection. If we occasionally say something that appears hypercritical, our friends must take it as it is meant, friendly criticism with much charity.

Some time ago we received a couple of beautiful 5 x 8 prints from our friend W. C. Russell, of Baltimore, who sent us such a gem of Harper's Ferry. One of these is a schooner under full sail, taken, we judge, from the point of land called Locust Point, which forms one side of Baltimore Harbor. In the distance is seen the grain elevators and yards of the Baltimore and Ohio Railroad, which are remarkably distinct for such a distance in an instantaneous view. The vessel, which is evidently the object for which the picture was taken, is an uncommonly fine piece of photographic work. The view is from the shadow side with the sun considerably to the left of the point of view. The effect is wonderful, and the clean, sharp delineation of every line of rope equals the best work we have seen

of this kind. The other picture is a view of the steamer Louise, that runs from Baltimore down the Chesapeake Bay. This is not as artistic a piece of work as the above print, nevertheless it is an uncommonly fine example of photographic work.

B. L. H. Dabbs, of Pittsburgh, sent a remarkably fine full-length print (18 x 22 on a Stanley plate), of two ladies in white silk dresses. The details in the drapery in this picture were very finely brought out; the folds of the dresses, the wonderful markings in the silk, and the minute texture of the illusion around the throat of each subject are simply perfect. The plate is full of the finest detail to the very edges. He also sent a little gem, a group of three girls with pretty faces and most gracefully posed. The lighting of this group is extremely fine, and the easy position of the heads (the whole taking the busts only) is most happily caught.

Mr. L. B. Shaw, of Elmwood, Mass., sends five 5 x 8 prints of first-rate work. A little boy with a spade and garden fork, upon the top of a short flight of steps, is evidently enjoying the fun of having his picture taken, and the happy look upon his face is well caught. Mr. Shaw tells us that this picture was taken on a cloudy day on a Stanley plate, with a drop shutter. We certainly could wish for nothing sharper in the way of a photograph. A picture of a little sloop under sail taken in a rain storm, with a drop shutter and same brand of plates, is very good; as also is a set of players at lawn tennis; the action in the latter is admirably caught. Two gems of views, also sent, are very beautiful. One is an arch through which you see what appears to be an old mill, with a stream running to the foreground, and babbling among the rocks. The whole effect is very artistic, and the reflections in the still water of the stream are very good. The other view is upon a small stream with sedgy banks, and trees growing a short distance from the shore. In the immediate foreground, a boat with a figure in it, gives a very pretty bit of reflection, and the whole scene is very artistic, and has a charming peaceful air.

W. H. Mowery, of Skaneateles, sends us a couple of views from his reception-room windows. These contain some of the best cloud effects we have seen for a long time. It is impossible to describe the beauty of good cloud pictures, they must be seen to be appreciated. If his patrons can look out upon such scenes as these upon Skaneateles Lake, which he sends us, he should never fail to obtain a pleasing portrait. The lovely clouds, the dancing sunbeams upon the rippling waters, here so beautifully caught, and the distant hills with their soothing softness, should calm the most disturbed minds, and the face should reflect the most peaceful emotions.

J. R. Moeller, of Grand Island, Neb., sends us a fine album full of views of this rising city of the West. The views consist of eight panoramic pictures of the city arranged in a very neat manner so that they fit when unfolded. With these we also have sixteen views of public buildings and places of interest. The Public School, the Bank, the Union Pacific Railroad Shops, the Court House, and the Union Pacific Railroad Hotel, are all well done, and good pieces of photographic work. Judging from these pictures, we think Mr. Moeller must be located in a thoroughly enterprising city, whose citizens know and appreciate good architecture.

From A. F. Randall, of Wilcox, Arizona, we have a number of pictures and

portraits of Indian celebrities. They are very striking examples of portraiture, and very well done. They are very interesting to us, as they are pictures of people we hear a great deal of, but never see. The features in the faces are very striking, and form admirable subjects for the photographer. Comanche John, the son of old Blue Ruifa, evidently thinks he is a fine-looking fellow, judging from his pose. He looks the very personification of vanity. Not the least interesting of these pictures are those showing the peculiar vegetation of the Arizona Territory. The gigantic cacti and yuccas are finely taken by Mr. Randall, and the pictures sent are highly prized by us. The photographic work is first-class in every respect, and we hope Mr. Randall will remember us again.

J. R. Swain sends a little gem of detective camera work in the shape of a group of geese. This is very fine. Almost every feather is sharply caught, and the whole picture is clean and well brought out.

We must now stop, and will speak of a number of other additions to our gallery in our next issue.

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## PRINTING AND TONING.

BY RANDALL SPAULDING.

[Read at meeting of the Society of Amateur Photographers, December 22, 1885.]

I HAVE been asked to tell what in my experience I have found to work best. Although my experience has been short in time and narrow in compass, yet I shall not hesitate to describe it in the presence of so many of you who, through more abundant knowledge, will be least likely to fail in charity. A somewhat narrow experience in the technique of photographic processes may, however, indicate that the wisest course has been pursued.\* Time is short, and if it be consumed in a trial of many methods, one may fail to become master of one. The work of our best professional photographers is marked by individual characteristics. They evidently discover what suits their taste and the tastes of their customers; and then take the means to get it. Such a course I would recommend to amateurs, especially in the earlier years of their experience.

Let us first find out what satisfies our taste, and then exert ourselves to realize it. We must be sure, however, that our satisfaction be genuine and not founded on inability to produce something different and better. It is worth while, at the outset, to mention the fact that many amateurs are engaged at their regular business almost from sunrise to sunset, and cannot, without desecration of the Sabbath, do their own printing. It will be found an easy matter, however, to enlist the services of wife or sister, or of some lady friend, in the charming pastime of picture printing; taking care, of course, that we ourselves, for the sake of proper family discipline, keep well in advance, at least in theoretical knowledge of the subject. I will confine my remarks exclusively to silver printing.

Some time ago I had made for myself a silvering tray large enough to contain an entire sheet. It consisted of a wooden frame to which a glass bottom was cemented. The frame and corners were thickly coated with shellac. I prefer now, however, to use a wooden tray—the “common sense” tray—large enough to float a half sheet, because, with the limited space at my command, the half sheets are more easily and quickly handled. A hole may be bored near the



top at one corner into which a tube may be inserted for pouring off the solution. Two screw eyes, one at each corner, are screwed into the wood, and hold the ends of a glass rod, over which the sheet is drawn when taken from the bath.

I have used a sixty-grain solution of silver, made up as follows:

Water.....	64 ounces.
Silver nitrate.....	8 “
Ammonic nitrate.....	2 “
Magne-sic nitrate.....	1 “

Other deliquescent salts may be used in place of the ammoniac and magnesian nitrates.

Their office is to furnish moisture during the printing, by which the union of the ammonia derived by the paper in the process of fuming and the chlorine evolved by the action of sunlight is greatly facilitated.

To each ounce of the solution I add one drop of strong ammonia to neutralize the nitric acid that is gradually set free from the silver nitrate. After using the bath for some time, if the prints come out rather red in tone, I add more ammonia. My bath has required very little effort to keep it in good condition. It has been occasionally strengthened with silver, and the suspended organic matter has been shaken down with a handful of kaolin. It has been very rarely filtered.

The albumenized paper that I have used almost exclusively bears the mark of “Extra Brilliant N. P. A. Dresden.” Doubtless other brands would serve equally well, if I should learn to use them. The paper is floated about two and a quarter minutes. For breaking the bubbles that stick to the film I use neither a wooden nor a glass rod, but find a sharp blowing of the breath quite sufficient. Breathing upon the edges of the sheet when it is first laid upon the bath is perhaps the most convenient way to prevent curling.

After floating a sufficient time, the sheet is taken with clips at two corners and drawn over the glass rod, and then pressed between blotters; after which it is hung across wooden rods, where it becomes dry in a few minutes. I have fancied that the paper does not deteriorate so quickly when the free silver nitrate has been taken off with the blotter.

With tear-drops, measles and other diseases to which albumenized paper is heir, I have had almost no experience. Nor was I thus troubled before adopting the use of the blotter.

Before leaving this topic, permit me to recommend the use of the siphon in drawing the silver solution into the tray. I regard this a matter of some importance. A cork that fits the silver bottle should be provided with two tubes, one of which, extending at one end nearly to the bottom of the bottle, is bent just above the cork and extends at the other end below the bottom of the bottle and outside of it; the other tube is short, merely passing through the cork. A smart blowing through the latter tube when the cork is in position, sets the siphon in operation. Just before the level of the solution has dropped to the lower end of the tube, the siphon is raised.

In this way, at each pouring of the solution, all scum and dust floating upon the surface are left in the bottle; likewise the sediment remains undisturbed upon the bottom.

The fuming-box is too simple to need description. I allow the sensitized

paper to hang in the fumes of ammonia from twenty-five to thirty minutes, even forty-five minutes in cold weather. After fuming, it is well to wait a few minutes for the paper to contract from its moist and expanded condition, otherwise the prints may not be perfectly sharp.

Thin negatives, as the books admonish us, require longer floating upon the silver bath and slower printing. I have had little success in printing under a heavily clouded sky. The chemical action seems to be superficial, and the image fades greatly in washing.

I am obliged, like most amateurs, to make the exposures at an ordinary window. For this purpose I have made a frame by nailing together three boards in the form of a right-angled triangle. The most acute angle is thrust out of the window, while the frame at the right angle rests on a chair. Strips for supporting the printing frame may be nailed across the board, and in case of high wind a button for each will be found convenient. Six or eight 5 x 8 printing frames may thus be exposed at the same time.

Before toning, the prints are washed in three or four changes of water, the number of changes depending on the rapidity with which they are made. I am careful not to wash away all the free nitrate. If nearly all be washed away, the prints will tone to a warm brown, though somewhat slowly, and will hold their tone particularly well during fixing. If considerable free nitrate remain in the paper, the resulting tone will incline to purple. Each should consult his own taste in this matter.

After washing, the prints are immersed for five or six minutes in a solution of sodic carbonate and common salt, about one-quarter of an ounce of a saturated solution of the former and half an ounce of a saturated solution of the latter to three pints water. The soda puts the print in an alkaline condition, while the salt produces a redness, from which the change of color in toning is more easily observed. A single rinsing in water follows, and the prints are ready for the toning bath.

My stock solution of gold contains one grain of the chloride of gold and sodium to an ounce of water. If I were making a bath of thirteen ounces, I should take ten ounces of water, three ounces of the stock solution of gold, to which had been added three drops of a saturated solution of sodic bicarbonate, about six grains (a pinch) of common salt, and three grains (a pinch) of sodic bicarbonate. This should be sufficient to tone three, or at least two and a half, sheets of paper.

The time of toning depends, of course, on the temperature and on the condition of the bath. It varies from ten minutes to three-quarters of an hour.

Observation has convinced me that beginners err most frequently in taking the prints too quickly from the toning bath.

In considering whether or not to withdraw a print from the toning bath, I always ask myself, not "Does the print show a satisfactory tone?" but rather, "Will the tone be the worse for remaining longer in the bath?" I thus provide for the partial loss of tone in the fixing bath. Care should be taken on the other hand not to carry the print into the blue or slaty stage, in which the tone is so cold and disagreeable.

Another essential condition of securing a satisfactory tone, is that the print be examined from time to time in strong diffused daylight; delicate shades of



purple and brown cannot be distinguished by artificial light. I shall not soon forget a batch of prints that were toned in the evening. While it may be true that considerable experience in printing from the same negative may enable one to tone safely in the evening, yet this should be done only as a last resort.

Each one must determine for himself how many prints he can manage in one batch. I find it desirable to change them continually from the bottom to the top of the pile in order to avoid toning in spots.

Fixing the prints is a simple matter. My formula is:

Water .....	1 gallon.
Sodic hyposulphite .....	1 pound.
Sodic bicarbonate .....	1 tablespoonful.
Common salt .....	1 " "

The prints are laid in the bath and moved about from time to time. They remain in the hypo not less than fifteen nor more than twenty minutes. During the fixing I never look at the face of the prints; the sight is too painful; the beautiful tone seems to be gradually fading away. But I console myself with the certain knowledge that, if all the conditions have been observed, the pictures will come out all right in the end.

As the prints are drawn from the fixing bath, they are placed for three or four minutes in a strong solution of common salt. I doubt not that this salting is, in most cases, quite superfluous, but having found it an efficient cure for blistering, with which I was troubled two or three times, I continue its use.

In order to remove the hypo from the prints, I wash them in four or five changes of water, allowing them to remain in each change of water a considerable time. I then soak them seven or eight minutes in a weak solution of lead acetate, after which they are washed as before in several changes of water. I do not know that any advantage is derived from this treatment with lead. I once supposed that it helped to remove the hypo, but when such experts in photographic chemistry as Dr. Stolze and Dr. Ehrmann tell us that this is not the case, I feel bound to respect their assertions until further light has been received.

After washing, it is my practice to remove the superfluous water from the prints by means of blotting-paper. They are then laid away in other and dry blotters until brought forth for mounting.

You are now fully aware of the fact that my experience has run along a narrow path. If any amateur will do as I have done, I can assure him most positively that he will produce at least as good work as I can produce. While it is our proper aim to perfect ourselves in all these technical details, we must not forget that there are prizes far better and more difficult to secure, namely, trained perception and artistic judgment.

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#### THE INTERNATIONAL PHOTOGRAPHIC EXCHANGE.

WE have just received from Mr. F. C. Beach the first catalogue of the negatives and transparencies ( $3\frac{1}{4} \times 4$ ) received from England in November. They number two hundred and fourteen (214) plates altogether, and comprise some gems of English, Scotch, Welsh and Irish scenery and places of interest, as well as some from the coast of France. Our English cousins have certainly done well in the variety of their views, and if the American members of the Exchange only do as well, the Exchange will be one of the most successful amateur photo-

graphic enterprises that has lately been set on foot. Prints of the American pictures are to be made and framed into a rough album, that the members may select those from which they desire copies before the plates are shipped to England. These copies are in the form of exposed plates, which each member will have to develop for himself. The same method of procedure will be followed with the English plates, a catalogue of which is before us.

This interesting exchange is now fairly started, and promises to be a success in every way. Those of our readers who wish to know more about the details of this work should communicate with Mr. F. C. Beach, 361 Broadway, New York.

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### OBITUARY.

PROF. JOHN CHRISTOPHER DRAPER, M.D., LL.D.

THIS well-known man of science died quite suddenly at his residence in New York on December 20th, of pneumonia. He was well and attending to his duties at the Medical School of the University of the City of New York only a few days before he died; but in spite of his own medical knowledge, coupled with that of his friends, the most skilled physicians in New York, he succumbed to this fatal malady.

Prof. Draper was born in Prince Edward County, Va., in 1835, and was the eldest of the illustrious sons of the late Prof. John W. Draper, whose fame was world-wide. His early education was in the Grammar School of the University of the City of New York between 1842 and 1852. In 1854 he took up the study of medicine and graduated from the Medical Department of the University in 1857. He then traveled in Europe, and studied medicine there. In 1858 he was made Professor of Chemistry in the College of the City of New York, a position he held for ten years; and during three years of the time he was also Professor of Chemistry in the Cooper Institute. Dr. Draper served in the army in 1862, and in 1863 he took the chair of Physiology in the College of the City of New York, which he held till his death. In 1866 he was also made Professor of Chemistry in the University. He was the author of quite a number of books and a contributor to the magazines.

In scientific circles in New York he will be missed for his active interest in the work of sanitary reform; and by that large class of students who have sat under his interesting instruction.

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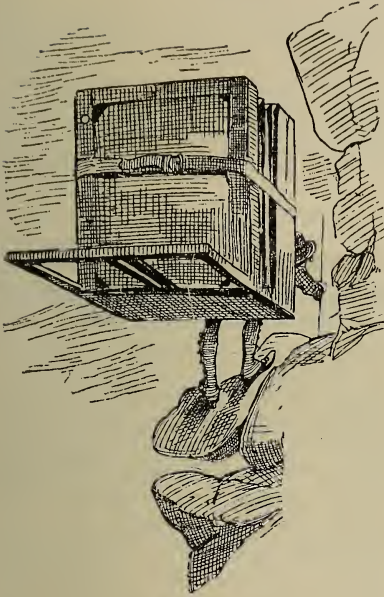
THE favorite Roller Holder with the young folks is the "Roller Skate."

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As cold weather has now set in, we would remind our readers of the importance of keeping their solutions and their albumen paper at about the same temperature, say between 60 and 70 degrees Fahrenheit. If the paper is very *cold*, and the water used for toning or washing is of a much higher temperature, or *vice versa*, there is danger of the albumen softening, and either coming off the paper or making the prints look mealy. It is very important to keep this always in mind while John Frost, Esq., is around.

[From the Bulletin, Sydney, Australia.]

## AMATEUR PHOTOGRAPHY—A FEW HINTS.



In selecting apparatus, regard must, of course, be had to the especial object in view. A camera that might be very suitable for portraiture in a garden, conservatory or well-lighted room, would probably prove too cumbrous for the tourist who preferred to accomplish much of his journeyings on foot.

The intelligent amateur will have noticed that the examination of an image is greatly facilitated by a dark cloth thrown over both his own head and the camera, to exclude light from behind. This is technically known as the "focusing cloth," and is used by every photographer.



The stand upon which the camera is erected must possess a degree of rigidity sufficient to keep it quite steady, otherwise the resulting picture will not be so sharp as it would otherwise be. The judgment that enables one to hit an "exposure" with accuracy is very soon acquired with a little experience.



# ANTHONY'S Photographic Bulletin.

EDITED BY

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Aided by ARTHUR H. ELLIOTT, Ph.D., F.C.S.,  
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E. & H. T. ANTHONY & CO., Publishers.

[From Photographische Archiv.]

## ARISTOTYPY.

ALTHOUGH the printing process with chloride of silver collodion cannot be said to be new, being known for more than twenty years, and having been applied with best success by a few of the initiated (who, of course, kept it a secret), it may be new to many who had no opportunity to become familiar with the process. And even older professionals, who have made collodion negatives years ago, will have to master a strange process if they resolve to introduce the same in their business. But everything new costs time and money.

The picture is a faithful copy of the negative, with all its beauties to the most delicate details, which cannot be reproduced by any other except the carbon process. It is fresh and clear; can be burnished so as to resemble an enameled picture; and will keep like a copper engraving.

Mr. Cronenberg, in Westphalia, Germany, who is an enthusiastic friend and supporter—nay, even the promoter—of this process, says:

"The paper possesses a brilliancy not reached by any other process. A depth is prevalent which is astonishing; every detail of the nega-

tive is reproduced; and nothing is lost from the view."

To prepare the paper, it is put on a frame or stretcher, flowed with the collodion, taken from the frame, suspended, and is ready for use after drying from ten to twelve minutes. It copies much quicker than albumen paper, and can be toned and fixed much quicker. The whites in the picture are most beautiful.

Translated by H. D.

[From Photographisches Wochenblatt.]

## THE AMMONIACAL EOSINE SOLUTION AS AN OPTICAL SENSITIZER.

BY V. SCHUMANN.

THE value of eosine as an optical sensitizer is generally known, and there is hardly another coloring matter which, according to the present state of our knowledge, can be of such excellent service to the orthochromatic plate as eosine and some of its derivatives.

The sensitizing with eosine is influenced by the solution medium. Ammonia gives more sensitive plates in the yellow and yellow-green than alcohol and water; although the exciting influence of these is not very great, according to my late experiments. How perceptibly the behavior of the ammoniacal eosine solution depends upon the condition of the coloring matter, has been sufficiently proved by my former experiments in that direction.

As demonstrated by Professor Eder, the eosine may now be used mostly in ammoniacal solution for coloring plates. There are two ways to introduce the color matter into the emulsion film. Ammoniacal eosine may be added in small quantity to the ready-made emulsion, or the dry plate may be bathed in a very weak aqueous eosine solution, to which has been added some ammonia. The former method is generally used, because the bathing of the plates leads too easily to defects on the surface of the emulsion coating, and is saved entirely by preparation of plates by one's self. For this reason I have done it myself only in special cases. In my continuous production of orthochromatic emulsion, I have, without exception, colored the liquefied gelatine.

I used to be of the opinion that it was indifferent for the color sensitiveness how the ammoniacal eosine was introduced into the film, and it seems that this is the general view. At least I have nowhere found definite remarks about the greater preference of one or the other manner of coloring gelatine plates with eosine.



On the point of producing a gelatine emulsion suitable for a view of the less refractive half of the prismatic spectrum, I find that both methods of coloration give entirely different results.

With the yellow and green bands of the carbon spectrum of a Geissler tube, I was enabled to obtain action in ten minutes upon a plate, while another showed no traces after an exposure four times as long.

The contrast was too striking to let it pass unobserved. I have now tried by a series of preparations to locate the cause of this difference, and although I have not succeeded completely, I can to-day confirm the admissibility of my first observation, and may add that it is not only the way of introducing the sensitizer, but also the character of the emulsion and, above all, the developer, which seems to influence the orthochromatic value of the color-sensitive plate in a high degree. Without going into details, I can say to-day that the bathed gelatine plate decidedly deserves the preference when a reproduction of the yellow rays is wanted.

By sensitizing the liquid emulsion I have not succeeded in producing plates which approached in sensitiveness—for the yellow and green rays of my spark and gas spectra—my bath-plates, and it is to be expected that they will maintain this superiority in taking views of colored objects.

These bath plates, it is true, show a great inclination to fog, but not all of them.

Professor Eder's ammoniacal oxide of silver emulsion seems to be an exception. I presume that all emulsions of a medium sensitiveness are equally good for use.

My observations extend at this time only to iodized bromo gelatine (Ag Br and Ag I prepared together). Having had no success yet with the iron developer, and having obtained excellent results only with the potash pyro developer, and the latter working more brilliant with the presence of iodide of silver, it is possible that pure bromide gelatine does not furnish a highly sensitive eosine plate.

I have to note, as particularly valuable, the uniform intensity in which the whole spectrum, beginning from D (beginning of the yellow), appears, provided that the eosine bath had the correct proportions. The quantity of ammonia in the bath is of great influence, but I could not obtain this while coloring the emulsion. When I exposed the plate bathed in eosine before it was dry, the yellow sensitiveness seemed to be less and deviating. But this is of no consequence, as I would not like

to recommend wet gelatine plates for any kind of work, the least for spectrum photography.

I intend to continue this experiment, and shall report from time to time.

Translated by H. D.

[From the Amateur Photographer.]

## THE BLACK CLOTH IN A WIND.

BY SIGMA SMITH.

THERE are few things in photography, not even excepting the vagaries of an erratic tripod, or exposing two views on the same plate, that give so much sincere and pure exasperation as the peculiar tactics adopted by the most well disposed black cloth when the wind is blowing merrily, and the little zephyrs are at play. At such times the long-suffering photographer is apt to cast his eyes aloft, and to pray for some of the virtue attributed to Job of old. One can see in the mind's eye the scene that might almost be called "the old, old story," so common is it.

The photographer has his view, and he buries his head beneath his cloth and scans the image on the ground glass with a grim enjoyment—suddenly the wind lifts the cloth, the image disappears in the flood of light from behind, the artist clutches wildly and blindly to the front in hopes of reaching the errant corners of his protective cloth, misses his mark, strikes the lens, knocks the cap into the grass, perhaps loses his favorite stop, disarranges his camera, treads upon one of the legs of his tripod, rubs his hat off, and then emerges with a red face.

Being a long-suffering man, after a quiet ramp around, he essays to rearrange the disordered apparatus and begins again. This time he takes particular care of the corners behind, perhaps fastening his teeth upon them, and anxiously looks to his ground glass. Ah! the cap is on the lens. He gropes forward for the cap, but finds that it is *not* on; where, then, is it? (*sotto voce*)—All is dark; out pops the photographer's head once more to see. "Ah! hang it, the beastly cloth hangs in front of the lens," and so on, etc., etc., etc.,

Now, all this can be avoided, or largely modified, by a very simple expedient, to unfold which is the object of this paper, and this is: *Have small lumps of lead, not too heavy, sewn into the four corners of the cloth*, and it will then hang straight down just where it may be placed, and the strongest wind will barely move it, certainly not blow it off the camera. This is a wrinkle that will save an infinity of trouble, if adopted.

[From Sunday Times, New York.]

## PHOTOGRAPHS BY ELECTRICITY.

SOME weeks ago a demonstration of photography by means of artificial illumination was given in the theatre of the Society of Arts, London. The lights available included, besides the electric, a Sugg gas-burner of 200-candle power, and F. W. Hart's magnesium lamp. Capt. Abney, F. R. S., presided, and there was a crowded attendance. Mr. H. Van der Weyde, of Regent street, illustrated the process of taking portraits by means of the electric light, a process of which he is the inventor. Six years ago, he said, he took up the challenge of a despairing London photographer to invent a method of taking good photographs without daylight. After consulting Mr. Wharton Simpson, late editor of the *Photographic News*, he found that all previous attempts at taking portraits by artificial illumination had broken down from an artistic point of view, even the best results presenting a metallic or varnished surface, with glittering high lights, dense shadows and ghastly reflections. In his disgust he at first endeavored to condense the actinic rays of London daylight by means of a plano-convex water lens  $6\frac{1}{2}$  feet in diameter. The glass plates exploded under the pressure of the 987 pounds of water, nearly drowning him, while the wounds inflicted by the broken glass laid him up for six weeks. Having reconstructed his lens with more deference to hydraulic science, he was mortified to find himself, after all, on the wrong track. He then began experimenting with the magnesium and electric lights; he used a copper reflector lined with silver, and the largest dioptric light-house lens that could be made, reflector and lens being each four feet in diameter. He then found that the question was not to discover a better artificial light, but to turn and twist its diverging rays from a point, so as to concentrate them—make them embrace, instead of strike, the sitter. In continuing his experiments he sought to obtain, first, parallel rays from the parabolic reflector, and then to condense them into converging rays by the dioptric lens. It was at this time that he hit on the most important point in his invention; it was a small concave mirror, four inches across, placed close to the light, so as to hide it from the sitter and prevent any direct rays from leaving the reflector. After further details, including a claim to have been the first, in 1877, to turn gas into electricity, Mr. Van der Weyde, amid the loud and re-

peated applause of those present, conducted a series of experiments, each illustrative of some special advantage of his invention.

## PACIFIC COAST AMATEUR PHOTOGRAPHIC ASSOCIATION.

THE regular monthly meeting of the association was held at the association rooms, Thursday, December 11th, *President SMITH* in the chair.

Minutes of last meeting read and approved.

The Committee on the Prize Picture for December, recommended that one month's further time be granted to competitors, because of the bad weather prevailing during the past month. Granted.

The Committee on Exhibition recommended that the proposed exhibition be postponed until March. That the season had been so cloudy and rainy that members had not been able to do any printing for the past two months, and that it would be impossible to make a good showing of prints before March.

After discussion, it was decided to postpone the exhibition until the first part of March.

The report of the Committee on Membership being favorable, Messrs. J. W. Stanford and C. L. Goddard were elected members of the association.

It was resolved that all officers of the navy on the Pacific coast should be eligible as non-resident members, upon the payment of the regular \$3 yearly fee.

On motion, several new periodicals were subscribed for.

The Corresponding Secretary read several letters from American and foreign societies, and passed around a large number of prints sent to him for exchange.

A letter was also read from Edward L. Wilson, inclosing a letter from G. Piazzi Smith, the Astronomer-Royal of England. Mr. Wilson had sent to Mr. Smith a large number of views made by the members of this association and sent to Mr. Wilson, and by him used as illustrations in the *Philadelphia Photographer*.

Mr. Smith's letter being very complimentary, the Corresponding Secretary volunteered to send him another set of later views, and several members promised to contribute thereto.

Several members expressed their intention of sending views to the exhibition of the Philadelphia Photographic Association. On motion the whole matter was referred to the Committee heretofore appointed.

Mr. Passavant exhibited a large number of whole plate and 8 x 10 transparencies, made on chloride plates of his own manufacture.

These were greatly admired, and considered by all the members as being the best specimens of this class of work ever exhibited.

Mr. Brooks passed around for inspection several very remarkable specimens of enlargements. In these enlargements a half-inch figure is successfully enlarged to five or six inches, and the enlargement is sharp and clear. One view was taken from the dark-room window with a detective camera, and is a picture of a young lady sitting at a back window of an adjoining house, evidently unconscious that her picture is being taken. The head is not over a third of an inch in diameter, while in the enlargement it is at least two and a half inches. The expression of the face and every line and fold of the dress is perfectly portrayed. How surprised that young lady would be if she ever saw that picture.

Mr. Brooks uses a contrivance on the principal of a magic lantern, making a large positive, and a negative from that by contact. His apparatus is rough, but effective, consisting merely of the two front lenses of an opera glass and a lamp.

Several unique designs for Christmas cards were shown and described, and some of the results were certainly exquisite.

After a lengthy and enjoyable meeting, on motion, adjourned.

## THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.

SPECIAL MEETING, DEC. 22D, 1885.

THE meeting was held in the society's rooms, 1260 Broadway, and was called to order at 8.15 P. M., *President* BEACH in the chair.

The usual announcements of social meetings were made, and special attention was called to the meeting of January 26th, at which the experiment of photographing the audience by the aid of the magnesium light would be made. Mr. Beach then stated that on February 9th he hoped to give another demonstration on "Enlarging on Gelatinobromide Paper," also that the second winter lantern exhibition would be given on the 23d of February. Continuing, he said: Since we had our last regular meeting, we have been fortunate enough to have had a very fine exhibition of photographs. At least our friends tell us that they think it was quite successful, so we think so. There were about thirty-seven exhibitors, and nearly eight hundred photographs were shown, and we think that is very creditable for the first time. Next

year we hope to have seventy-five exhibitors and in the neighborhood of twelve hundred pictures, if possible. At any rate we want to have a good exhibition, and I will state here that it will occur some time in November, 1886, and I would like to have the members bear the matter in mind, so as to make it what it should be.

The judges of the last exhibition were G. W. Pach and J. O. Davidson. Mr. Pach was the photographer and Mr. Davidson the artist. I would also state for those who have not heard anything about it, that the International Photographic Exchange, of which I have charge, has started now quite successfully. We have some 214 plates, which were sent over from England, of very interesting subjects, and we have sent abroad the same number to Mr. H. Smith, the manager in England. Any of the members who would like to investigate the matter will please communicate with me at any time, and I shall be glad to give them particulars.

I would further state that there will be a Presentation Print Exhibition some time in April, and I would like to have members prepare for that event. We will give a copy of the print selected as being the best, to every member of the society.

Another club, called the Postal Photographic Club, of which you may have seen some mention in the journals, has been formed. The idea is this: An album of prints is sent around to members once or twice a month, and each one is required to enter a criticism upon the pictures—the defects and advantages and beauties of each picture are to be pointed out, so that it is not only interesting as enabling one to see the work of others, but also trains one to properly criticise a photograph.

Lately Mr. E. L. French, of Aurora, N. Y., has been made manager. He is a worthy gentleman, and will conduct the club very actively. I commend it to any member who would like to take part in it.

I would also like to state that we have put up a register-book in the dark room of the society, and any member who comes here in the daytime or evening to use the dark room is requested, according to the house rules, to enter his name in this book, in order that the officers may have a record of the number who use it.

I have two paper negatives which were made in 1851. They were sent to me by Mr. Thomas Mansell, recently elected a corresponding member, and I presume were



prepared after the first paper processes invented by Fox Talbot. [Mr. Beach then exhibited the negatives and gelatine prints from the same.] Respecting these, Mr. Mansell says that the tower represents a memorial in commemoration of Queen Victoria's visit to the Island of Guernsey, England, and it is called the Victoria Tower. He says "these pictures were taken by my uncle, May 20, 1881, in the Channel Islands, Guernsey, England. He took a great number of these kind of negatives in England and of different views on the Island of Guernsey." He will try and get more of the negatives and send them to the society.

Now I have a very good specimen of a modern paper negative, to show what can be done with paper in the reproduction of glass transparencies. First I took eight transparencies, some of which were thinner than others. I put them all in one large printing frame, side by side, and then I put this sheet of paper over the entire lot and held the frame up to the gas-light, about eighteen inches away, for about five seconds, and then developed the latent image. The result was, that although some of the transparencies were a little more dense than others, yet, as an average, they gave very good paper negatives. Having obtained this, it is very easy to get paper positives by simply laying the sensitive sheet upon the paper negative, exposing and developing in the usual way.

*A Member*—Do you use bromo-gelatine paper?

MR. BEACH—Yes, sir; it is some of the Eastman slow emulsion paper. It works very well. The whites are very clear. [The specimen picture indicated quite clearly the advantage the paper possessed for this purpose, and was examined with interest.]

I have a shutter to show you, invented by Mr. E. F. Hitchcock, of Cleveland, O. It is intended to be secured to the front of the camera behind the lens, the latter being screwed on to it. The object is to make a time or instantaneous exposure at pleasure, and the shutter works on the go-and-return principle.

MR. BEACH stated that he had another shutter brought to him by Mr. Arthur Newbury, the inventor, and a resident of Prince Edward's Island. The idea is to cut off the sky and give the foreground a little more exposure. It is an ordinary drop shutter, sliding into a wood case attached to the lens.

You will observe that it is very roughly made, but he told me he had had very good luck with it, and in such ice-cold regions as

Prince Edward's Island, where the snow reflected so much light, he found something of this kind was necessary.

I have some of his pictures here, and I will ask the secretary to pass them around. They show how bright the light at Prince Edward's Island must be, and picture to us very vividly how the passengers have to assist in working their way across the Straits of Northumberland. It seems they all have to put a strap around their shoulders and help carry and slide the boat along over the border ice until they get to the water.

Another article that we have to show this evening is an opera-glass camera, and I believe that Mr. King has possession of it. Mr. Gregg will illustrate it, and after he illustrates it I have another novel camera which I will take pleasure in exhibiting to the gentlemen present.

MR. GREGG—*Gentlemen*: The idea of an opera-glass camera came to me when a gentleman brought me a camera that was made in Paris of a field or opera glass. The plate was only protected by a piece of silk ribbon, stretched by a spring, but the strain upon the silk so opened its fibers as to permit sufficient light to pass and fog the plate. We substituted a metal plate holder with a metal slide, and thereby succeeded in making very clear plates,

I have seen some very beautiful pictures made with a lens that gave a picture twenty-six lines—that is, equal to the largest ordinary opera glass that comes. I have seen lantern slides made from those pictures, and they were so successful that the parties came to me to make a camera for the purpose of making little negatives that could be either enlarged or diminished, and which could be carried very easily. At the same time, by using the second barrel of the field glass, having a ground glass at the large end and a suitable lens at the other, I made it focus everything that will be seen on the dry plate. Then by my shutter, which is run in between the lens (when I focus on my ground glass to get the object that I wanted) by touching the releasing spring with my little finger, I shoot it this way [illustrating by holding the glass to the eyes and looking off]. One of the hardest things has been to get a shutter to run between the lenses slow enough to make a good picture, and it is necessary to take a very rapid plate in order to work on a camera of this kind.

The opening in the shutter is about three-eighths of an inch, and the lens of itself is, I can surely say, one of the most rapid lenses that has been put into a photographic camera. The lenses are ground very thin. The plate holder



is made of paper. I did not have a chance to get up one quite so nicely as it should have been gotten up, though I have gotten it up, so far as the qualities of the plate holder goes, as well as I could wish. This is made of dark paper; the plate is inserted at this end [indicating]. We use a square plate, and when it is covered the holder is light-tight, and then the plate holder is put into the camera in this manner, and the slide is drawn, and when you get your object on the ground glass you press this button and make your exposure, and the slide is put back, and the plate holder being a single one, you take it out and put in your pocket and then put another one in. It is all carried in your pocket.

The principal feature I claim on the camera is "portability," and nobody would think when you are holding an opera glass at them, that you are making a photograph.

I have had several gentlemen ask me if I thought it would be feasible to take it to the opera and photograph the leading lady actress; but I don't think the light is strong enough for that purpose. We may succeed in doing that after a while. I should mention that the size of the negative is  $2\frac{1}{8}$  inches in diameter.

Mr. BEACH—I would like to ask you about the shutter in the camera. How does it operate; is it a rotary shutter?

Mr. GREGG—Yes, sir. Do you want to see it?

Mr. BEACH—The shutter is simply a little disk of metal with an aperture equal to the diaphragm, which is operated by a flat, coiled spring.

Mr. GREGG—Yes, sir, it is operated by a coiled spring, and by pressing this little button you release the trigger. There are two stops on this little disk, so that you can hold it for focusing and making time exposures.

Mr. BEACH—Are there any more questions to be asked about the opera glass, if not the next subject will be a still more detective camera. It looks rather large, but at the same time it is necessary to have large things sometimes to do small work.

This is what we call the "vest" camera.

Mr. Beach then explained that a special false vest, made of stiff leather material, was put over the ordinary vest, and suspended in position by a cord of black tape, passed behind the vest. On the inside of the false vest was a pocket of stiff leather, which supported the camera proper, the back of the latter, when in position, resting against the front of the real vest, and clamped, as it were, be-

tween the two. Suitable openings for a spindle and its knob, and a lens tube to project through, were arranged on the front of the vest, and as the lens tube and knob were made to correspond with the false buttons, there was nothing about them or the vest to attract any one's attention, particularly after one or two of the top buttons of the coat were buttoned up over the top of the vest.

The camera proper consisted of a circular case of metal, nicely nickel plated, about seven inches in diameter and two inches thick, divided by a thin, blackened metal partition on the inside, having a small radial truncated aperture cut between the center and its outer edge. Upon the front side of the partition, held in close contact with it by a small pressure spring, was a rotating shutter propelled by a flat, coiled steel spring, and provided with four apertures similar in size and shape to that in the partition.

A shaft or spindle passed through the center of the partition, to which the spring of the shutter was attached, and around which the shutter loosely revolved. The end of the spindle passing through the rear of the partition, terminated in a disk two inches in diameter, upon which the sensitive plate, cut in the shape of an octagon, rested. A pawl and ratchet wheel just under the disk prevented the spindle from rotating backward, and at the same time served to hold the spring of the shutter to any desired tension.

The front face of the case, carrying a small lens made to imitate a good sized button, slipped over the rim, and was attached thereto by a bayonet joint; through the center projected the front end of the spindle, on the end of which was screwed a small black button, having a slight brass projection at its edge, intended to serve as a guide when rotating the plate, that the operator may know where his first exposure was located.

A simple spring release device for the shutter was arranged on the inside rim of the case, operated by pulling a string, which passed to the outside and was long enough to come down under a vest to the waist of the operator.

The back of the case had on its inside, near the center, a flat spring, which, as the back was attached to the rim by a bayonet joint, pressed upon the back of the sensitive plate, holding it face down against the face of the rotating disk, previously mentioned.

To operate the camera, it is only necessary, when opposite and within the proper distance of the object, to pull the string hanging

slightly below the bottom of the vest, which releases the shutter and makes the exposure without attracting the attention of any one. The small knob on the front end of the spindle is then rotated to the right until a click is heard inside, which indicates that the sensitive plate has been revolved forward sufficient to receive a new impression; at the same time the coiled spring is wound up equivalent to the amount it was uncoiled when operating the shutter, so that the speed of the latter, though moving continually forward in one direction, will be uniform.

Each plate will receive eight impressions, and when full may be replaced by a fresh plate in the usual dark room. By unscrewing the lens button a certain number of turns, the focus is regulated to suit different distances.

Mr. BEACH then held the vest up in front of him, illustrating how the different parts were intended to operate.

Mr. FICKENS—Do you take the vest off every time you want to change a plate?

Mr. BEACH—Yes, sir; unless you can push the vest out at the bottom and slip the metal case up behind into the pocket, which probably can be easily done, though I have not tried it. I will now hold up the camera and work the shutter. You observe how rapidly it can be released.

*A Member*—Does a dark room have to go with it?

Mr. BEACH—No, sir, it is not necessary to carry along a dark room (Laughter). I will state, briefly, that the idea of the apparatus is, that you can go along in the street and when you see the object which you wish to photograph, you simply pull the string like that [illustrating], and it makes the shutter revolve one-quarter of a revolution and makes the exposure; then you have a means at the front here for winding up the spring and also shifting the plate, and when you hear the click, that shows you have rotated the plate sufficient to have a new picture put on it. When you get the whole concern put into place, the lens looks very much like an ordinary button.

The inventor, Mr. F. D. Gray, brought the apparatus to me to-day, and it was nicely concealed. I really did not know that he had it on when he came in. I have some negatives taken with it and some enlargements; a few of them are very good. I will pass the negatives around and then you can get an idea of the pictures. Here are some original prints and also some enlargements, and I desire to call your attention to one picture of an

old broom man, who goes along Sixth avenue nearly every day, selling brooms. He has a peculiar walk and a peculiar way of wearing his hat—his hat is cocked in a certain way; it is a capital representation of him. On his circular of directions, Mr. Gray advises the purchaser to face the object he wishes to secure and calculate with his eye the distance. If it is more than 15 feet away the lens need not be changed, but if less than that the lens should be unscrewed about six turns. With a little practice a person soon trains himself to locate the picture correctly on the plate. I should not omit to call your attention to the excellent likeness of George Francis Train and the enlargement—you will notice he was perfectly oblivious to the work of the photographer.

I also wish to mention that we have had a series of albums presented to us by Messrs. E. & H.T. Anthony & Co., some five in number; they are sent for both exhibition and use. A new tripod case made of leather has also been sent by them for exhibition. You will notice that it has a strap attached, arranged so that you can carry the tripod from your shoulder, and by shortening the strap can carry it in your hand. A neat little catch is on the end flap, and you will observe [showing the end of the case] the tripod is inside. The tripod top is intended to be carried under the camera or in your pocket.

Mr. George H. Ripley has kindly presented a new lamp to the society. It consists of an ordinary argand gas burner, arranged in a neat wire frame about six inches in diameter, made in the form of a cup, and around which, as you see, is a ruby fabric which is very non-actinic and yields a large amount of light. The glass shade is the ordinary ruby kind. This lamp will be quite an acquisition to the society.

Furthermore, there is another advantage, which probably did not occur to the inventor, and that is, that this material is a non-conductor of heat, and if you happen to have it near your head, as when one stoops over to look at a negative in the ordinary way, it will be found the heat will not be at all disagreeable. On the whole, the lamp appears to be a very successful affair.

Do you wish to make any further remarks, Mr. Ripley, concerning it?

Mr. RIPLEY—No, sir; only I can put it on one of the gas jets there in the hall if you wish to see how it works.

Mr. BEACH—Mr. Ripley will put this on one of the gas jets and show its operation.

I desire to say that Mr. Atkinson has kindly presented the society with a very nice enlargement, and Mr. Canfield has also some photographs sent by Mr. S. C. Nash.

There has also been a new paper started called the *Photographic Beacon*, published in Chicago, Ill., and the editors have kindly sent on a large number of papers for distribution among the members of our society. Any of you feeling interested in the paper can take any number that you wish.

Mr. G. C. Cox, who has done considerable photographing for artists, has kindly lent us for this evening a series of very pretty photographs, which are hanging on the wall. They are intended to show different kinds of printing, particularly on plain paper.

Mr. CANFIELD—Perhaps it might be well, Mr. President, to say that these prints are all silver prints, and a few only of them are on albumen paper, and the different tones are produced by carrying the toning process further or not so far, according to the subject. They are all silver prints.

Mr. BEACH—Now Mr. Ripley has his light in order.

Mr. RIPLEY—It is well known, gentlemen, that the lights we have now are far from being safe with the plates of such extreme sensitiveness as are now used. This ruby light is non-actinic; it is of English manufacture and has a ruby glass; it makes a safe light, and it also diffuses the light, making a very pleasant light to work with. I won't keep it burning, because, the chimney-top being new, the heat burns the japan off, and the odor is not very pleasant.

Mr. BEACH—Mr. Ripley also has a novel camera here which, if time permits, he will explain later. At present the next business in order will be the reading of a paper on printing by Mr. Randall Spaulding.

Mr. SPAULDING then read his paper. [See page 16.]

Mr. SPAULDING—I wish to say one word in addition to what I have said, and that is, that there are many points in photographic chemistry that I have not touched on, partly because I thought you would prefer not to have me, and partly because I do not feel competent to speak to you as intelligently as the subject demands. There is a great deal in it that is obscure to me. I might mention certain chemical changes involved in the process of printing, but perhaps you all know them as well as I do. We all know that light reduces the silver chloride to silver subchloride, with the evolution of free chlorine, and that hypo

forms with both these chlorides a double salt that is soluble in water. The reaction of the hypo and silver subchloride sets free the metallic silver that constitutes the picture. I might have said something about the fuming which furnishes the ammonia to take up the chlorine evolved during the exposure to sunlight. I might also have spoken of the change that takes place in toning; but about this I am very much in the fog myself. Perhaps some one of our members might like to touch upon the subject. In some way the gold replaces part of the silver, but how it does it, whether it is through the formation of oxide of gold, an unstable compound, or by some other reaction, is a matter of some doubt. I profess that I am not chemist enough to deal with the subject, but there are several members here who I shall be very much pleased to hear from.

The last point that I touched on, namely, the use of lead, I should like to have cleared up. I believe there is a paper to be read this week, or next week, by Dr. Ehrmann before the American Institute, and he may give us more facts in that paper than we have as yet obtained. One of our oldest members is present, and it may be that he would like to take part in discussing this topic. I think that any one will confer a blessing on us all if he will find some chemical means of removing the hypo from the prints without so much washing. This is at present a great desideratum. It seems to me that in the present advanced stage of chemistry some relief should be found. Photographers wash and wash and wash, but if some chemical means can be devised for removing the hypo from the prints, it will save us a great deal of work.

Mr. ROOSEVELT—I would like to ask if my friend heated the toning bath, and if so, how? and how long will his toning bath remain in order when it is made?

Mr. SPAULDING—Yes, sir; I sometimes heat it in very cold weather.

Mr. ROOSEVELT—How do you heat it?

Mr. SPAULDING—In any way you choose. I myself have adopted two methods. I sometimes set the toning tray upon a soapstone, previously heated upon the kitchen range, for awhile. Again, I place it in a larger tray containing hot water.

Mr. ROOSEVELT—Do you use hot water direct in your tray?

Mr. SPAULDING—No, sir.

Mr. ROOSEVELT—You don't know whether it would do any harm or not, do you?

Mr. SPAULDING—I don't know.



Mr. ROOSEVELT—Does your bath keep?

Mr. SPAULDING—Yes, sir; it will keep quite a long time, and I can use it for a long time. I always pour it back into the bottle after using, and the next time I use it I simply add gold. If it shows a lack of alkali, I put in a pinch of bicarbonate of soda. A week or two ago I observed that my bath was working badly and I threw it away, but that is the only time that I ever absolutely threw a bath away. This once I did so.

Mr. ROOSEVELT—If it would not be out of place, I would like to state that in my experience toning baths won't keep at all. And as to heating them, being experimental in my turn of mind, I tried all manner of ways of doing it and found no way that would work; I put a spirit lamp under and only heated one portion of it; I used hot water in another tray outside of it; and finally used hot water direct in the bath, and when the heat began to diminish put more hot water in (Laughter).

(*To be continued.*)

## U. S. Patents.

- No. 326,184. Child's photographic chair. O. C. White, Worcester, Mass. Filed April 13, 1885. Issued September 15, 1885.
- No. 326,921. Photographic plate holder. Stearne Russell, Waterbury, Conn. Filed April 20, 1885. Issued September 22, 1885.
- No. 327,778. Photographic burnishing machine. William G. Entrekin, Phila., Pa. Filed April 10, 1885. Issued October 6, 1885.
- No. 327,895. Camera stand. Leander Noble, Sparta, Wis. Filed April 30, 1885. Issued October 6, 1885.
- No. 327,980. Camera shutter. David O. Adams, Columbus, Indiana. Filed January 5, 1885. Issued October 13, 1885.
- No. 328,033. Camera shutter. David S. Hitchcock, Cleveland, Ohio. Filed September 11, 1884. Issued October 13, 1885.
- No. 328,431. Photographic sensitive paper. Thomas C. Roche, Brooklyn, N. Y. Filed December 24, 1884. Issued October 13, 1885.
- No. 328,512. Photographic plate holder. Oscar M. Pausch, Newark, Ohio. Filed February 26, 1885. Issued October 20, 1885.
- No. 328,664. Photographic camera. Mathias Flammang, Newark, N. J. Filed February 24, 1885. Issued October 20, 1885.
- No. 329,385. Camera. William W. Grant, Brooklyn, N. Y. Filed June 28, 1883. Issued October 27, 1885.
- No. 329,299. Adjustable camera and box combined. Charles H. Scofield, Utica, N. Y. Filed February 25, 1884. Issued November 3, 1885.
- No. 330,182. Photographic plate box. Vincent M. Wilcox, New York. Filed May 27, 1885. Issued November 10, 1885.
- No. 330,775. Instantaneous shutter for photography. Walter Damry and Alfred Leduc, Lille, France. Filed April 22, 1885. Issued November 17, 1885.
- No. 331,385. Shipping case for photographic dry plates. John H. Durham, Chicago, Ill. Filed May 29, 1885. Issued December 1, 1885.
- No. 331,448. Photographic camera. George H. Ripley, Brooklyn, N. Y. Filed March 6, 1885. Issued December 1, 1885.
- No. 331,494. Shutter for photographic cameras. William C. Hadden, New York, N. Y. Filed September 14, 1885. Issued December 1, 1885.
- No. 331,668. Apparatus for developing and washing photographs. Horace F. Witmer, Philadelphia, Pa. Filed May 18, 1885. Issued December 1, 1885.
- No. 331,677. Photographic camera. George B. Brainard, Brooklyn, N. Y. Filed December 2, 1884. Issued December 1, 1885.
- No. 331,980. Photographic printing frame. William H. Lewis, New York, N. Y. Filed May 7, 1885. Issued December 8, 1885.
- No. 332,364. Process of producing photographs in permanent pigments. William W. Sherman, Milwaukee, Wis. Filed July 1, 1884. Issued December 15, 1885.

## What Our Friends Would Like to Know.

*N.B.—We cannot undertake to answer communications of a technical character except through the columns of the BULLETIN. Correspondents will please remember.*

Q.—A. S. H. sends us a picture of a device of his for moving a shutter on his camera in a horizontal instead of a vertical direction. This is accomplished by attaching the ordinary drop shutter to the lens so that it works horizontally, and is accelerated by means of a spiral spring fixed to a projecting arm from the camera box. He says:—Is my principle



correct, or are there better shutters in the market? He also sends prints of objects taken with the above device, which are very good.

*A.*—All these shutters are of value only from the results obtained with them, and those you send are as good as any we have seen. The pendulum test is very severe, but a little higher speed would accomplish even that feat, and with your device.

*Q.*—G. A. P. writes:—How are Indo-tints made, such as was in the *BULLETIN* November 14th? I like that picture very much, and would like to make them myself.

*A.*—Indo-tints are a form of photo-mechanical printing. The process by which they are produced is the invention of Mr. T. C. Roche, of New York, and is patented.

*Q.*—E. W. B. writes:—Will you please tell me the cause and cure of measly prints? Two weeks ago I lost a whole day's printing on this account. I came to the conclusion that it must be in the printing bath, so I put into it a few drops of ammonia and boiled it down, but I was not rid of it.

*A.*—Your whole trouble is probably due to a cold bath, and also to insufficient silver in it. Remember, the printing bath should be kept moderately warm and fully up to strength during the winter months. This is generally the cause of all the trouble with measly prints.

*Q.*—G. S. M. asks:—What is the best material to cover a photo car with?

*A.*—We should use the ordinary light waterproof rubber cloth for such a purpose.

*Q.*—J. J. writes:—In the *BULLETIN* for July 11, 1885, page 402, you say, "Diagrams of the apparatus for making emulsions will be published in a future number." I hope you will be able to do so, as I should like to get the information. If you cannot give the full description in your valuable journal, kindly tell me if there is any book published on the subject?

*A.*—The promise you speak of is in a report of the Society of Amateur Photographers of New York. The President, Mr. Beach, tells us that he will give us the drawings of the apparatus some time; but this is a little uncertain. Dr. Eder's book on Modern Dry Plates will probably give you the information you desire. It is for sale by our publishers.

*Q.*—L. E. S. writes:—Can you give me a formula to use a carbonate of potash solution and dry pyro to develop with? I want to do

some instantaneous work. I am traveling and want my chemicals as concentrated as possible. Also, which do you consider the best, carbonate of soda or carbonate of potash as accelerators? Will Mr. Roche's new sensitive paper have to be made transparent with castor oil to make it print well?

*A.*—Use the potash solution of the Beach potash developer. (See *BULLETIN* for 1885, page 667.) Dry pyro should be dissolved to give a developer with two grains of pyro to the ounce. We prefer carbonate of soda as an accelerator. It is not so likely to produce stains as the potash salt. Mr. Roche's paper does away entirely with the oiling process on the paper negatives. This, indeed, was the whole object of the invention.

*Q.*—S. C. B. sends a print with a number of small, black spots on it, and writes:—Can you tell me the cause? It is not a weak solution. When the prints are finished the spots are the same as you see them now.

*A.*—The trouble appears to be that some reducing agent like pyro dust has come in contact with the albumen surface, and this would cause such spots in silvering and printing.

*Q.*—A. B. S. writes:—I have been using the soda developer and my plates come out yellow. Will they work better in the potash developer? I sometimes get a little pink by mixing with ammonia, especially on short exposures.

*A.*—If your developer makes your plates yellow, you must use a clearing solution. Potash will often make a darker stain than soda. To clear the negatives, after removing from the developer, wash pretty well and then place them in a strong alum solution that contains about half an ounce of citric acid in a pint of solution. Do this immediately after development and washing, and wash well before putting into the hypo.

*Q.*—E. C. writes:—Please answer the following questions through the *BULLETIN*.

*First.*—How long will the stock solutions of the Cooper Developer keep in good developing condition in a cool place?

*Second.*—Does standing in a weak daylight affect its developing qualities?

I had some stock solution that was two weeks old, and it did not work very good, so I mixed up some new which worked much better.

*A.*—Cooper's developer keeps for months if the bottle is kept well corked. Weak daylight has no effect upon its developing qualities if it is kept in tight bottles.

## Views Caught with the Drop Shutter.

A. J. DAVISON, of Hartford, has been visiting Deep River, Conn., where he has been pleasing whole families by making good pictures of the various members, especially the babies, with which he has met with great success.

MR. WILLIAM McCOMB, of Muskegon, Mich., has just finished a large picture, 4 x 6 feet, containing 400 of the pioneers and business men of that section, which is pronounced a great success.

LICENCE'S *Canadian Photographers' Exchange* comes to us regularly. We are glad to see such an unpretentious little paper with a good many solid pieces of information in it.

MR. GEO. PRINCE has severed his connection with C. S. CUDLIF & Co., of Washington, D. C.

LOEBER BROS. send us a very neat catalogue of photographic supplies. We are glad to see this evidence of business enterprise. We note with regret that a fire in the building in which they are located in New York, entirely destroyed their stock, but these gentle-

men are too energetic to be much disturbed by this misfortune and will at once resume business at 121 Nassau street.

OUR friend, F. JAY HAYNES, has been astonishing our Western cousins with his handsome palace-car studio. At Helena, Montana, he had quite a crowd of visitors to see his unique studio, and did some handsome work.

ROBERTS & FELLOWS, of Philadelphia, will continue the production of lantern slides lately carried on by Dr. E. L. Wilson, having purchased his elaborate outfit for this class of work. These gentlemen were formerly employed by Dr. Wilson for this kind of work, and he strongly indorses them.

IN the last issue of the BULLETIN, by some *lapis quille*, we stated that "Mr. T. Hendricks, the well-known photographer of Syracuse, etc." This should read "Mr. F. Hendricks, the well-known photographic stock-dealer of Syracuse, etc." Mr. Hendricks must forgive us the blunder.

MR. ALTHAUS, who is with the G. Cramer Dry Plate Co., gave us a call the other day.

PROF. PROCTOR, the State Geologist of Kentucky, who has made so many photographs of the Mammoth Cave, paid us a pleasant visit lately.

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MUSEUM OF  
ART AND HISTORY  
OF THE  
CITY OF  
NEW YORK



BEFORE THE EXPLOSION.



Photo-Gravure Co., N. Y.

THE EXPLOSION AT FLOOD ROCK.



# ANTHONY'S Photographic Bulletin.

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Prof. CHARLES F. CHANDLER, Ph.D., LL.D., *Editor.*

ARTHUR H. ELLIOTT, Ph.D., F.C.S., *Associate Editor.*

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JANUARY 23, 1886.

Vol. XVII.—No. 2.

## THE ST. LOUIS CONVENTION.

It is but a very short time now when the Executive Committee of the Photographers' Association of America must begin to collect material for the Convention to be held in St. Louis. We understand that the meeting is to take place in June, and the sessions will continue from the 22d to 24th, inclusive. Our readers will see that this is but a very little way ahead, and they should be at work with their contributions for this annual reunion of the progressive photographers.

At the last meeting it was decided that there should be ten medals, of a money value of \$100 each, for the ten best exhibits of pictures shown at the St. Louis meeting. This gives a great impetus to the ambition of those who may desire to exhibit their work, and will no doubt call forth many excellent examples of photographic art. This decision to offer a number of medals as prizes for photographic work, was due to the suggestion of Mr. G. Cramer, of St. Louis, who headed the list with the generous sum of \$500. We do not yet know exactly how the medals are to be awarded, but when we remember the satisfactory management of the affairs of the association last year; and that the former Secretary and Treasurer were re-elected to those offices again; and that Mr. W. H. Potter, of Indianapolis, is the new President; we can have little doubt but that the manner of awarding the prizes will be just, straightforward, and with a fearlessness that is characteristic of these gentlemen.

Steps have already been taken to solicit essays and exhibits from Europe, and we believe that contributions from this source will be as interesting as any received in the past. Those of our readers who had the good fortune to see the Foreign Exhibit at Buffalo, will remember its beauty and the pleasure it afforded to those who saw it. We expect to see a collection of pictures at St. Louis that will certainly equal, if it does not surpass, that shown at Buffalo.

The inducement offered by the prize for the best paper on some photographic subject, which is the sum of \$100, should also stimulate the literary *coterie* of our association. Papers upon every phase of the photographic art should be forthcoming under such a stimulus, and we shall expect to see some admirable work in this direction. We are sure there are many among our numerous readers who will enter this literary contest, and we shall be very much pleased to hear them read papers at St. Louis. The field for competition in this work is a wide

one, and the variety of topics pertaining to photography that it is possible to discuss is very large. At the same time we would warn the aspirants for the prize that papers with good, sound, practical information, which perhaps embodies some experimental investigation also, will always rank highest with practical men. Perhaps some method will be adopted also by which several of the best papers, other than the prize essay, shall receive honorable mention.

To those of our readers who are not prepared to contribute to the exhibition, or cannot send papers for the meetings, we would suggest that they make arrangements at an early date to be present at the St. Louis pilgrimage. The officers of the association will no doubt make very reasonable rates with the various railroad and transportation companies, and all the best photographers in America will be there, or will be represented. The Buffalo meeting was a great success, but we believe St. Louis will be yet greater. If we may judge from the reception given to one of our scientific associations some years ago, in which we were fortunate enough to take part, St. Louis knows well how to entertain strangers, and we can assure visitors of a right royal greeting.

Since the last sentence was written and in type, we have received from Mr. R. Benecke, the Secretary of the St. Louis Photographic Association, the report of the meeting of January 6th, which we print on another page. The report speaks for itself, and we hope nothing will prevent our being present to enjoy the hospitalities of such warm-hearted hosts.

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#### EDITORIAL NOTES.

WE have to thank Mr. Robert S. Redfield, of the Photographic Society of Philadelphia, for season tickets to the exhibition of photographs held in the Academy of Fine Arts, in Philadelphia, January 11th to 16th. We are sorry we could not be present personally, but have secured a good report for our readers. See list of awards on another page, and next BULLETIN for report.

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THE following, from the *American Angler*, will show the value of photography as a means of verifying "fish stories."

#### *Juvenile Noses Excellent Bait for Pickerel.*

About ten years since, a well-known lady of Penn Yan, Yates County, N. Y., and her son, about eight years old, were fishing in a small boat on Lake Keuka. The boat was floating slowly over the clear water, and the boy was leaning over and watching the rocks and weeds at the bottom, thinking by chance he might catch a glimpse of the fish, as you and I have done. His nose almost touched the surface of the water, and suddenly a large fish darted up and seized the boy by his nose. The boy, of course, jerked up his head, and the fish, not letting go his hold, was lifted over the gunwale and landed in the boat. It was a pickerel, and weighed between three and four pounds.

A reliable neighbor of mine, who gave me these facts, saw the boy with his bloody nose and his capture, which was placed on exhibition for several days in the streets of Penn Yan.

Photographs of the boy and fish were taken, and all the circumstances were chronicled in the *Yates County Chronicle* and other papers of the village. I have

the name of the mother (since changed) and of the son, now almost a young man, both still living in Penn Yan. E. R.

December 26, 1885.

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THIS reminds us of the story of a boy who had a bare foot hanging over the edge of a boat somewhere down on the Jersey coast, when a large bluefish snapped off his great toe. That boy suddenly became famous; or, more properly speaking, no-toe-riotous.

[We have no photographs of this latter, and we disclaim all right to the authorship. It was sent to us by a friend, and we are going into hiding for several weeks to keep out of the way of the wrath of our readers for perpetrating it upon them.]

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THE Optical Lantern is the very excellent, common-sense name adopted for that charming and always interesting instrument so long known as the magic lantern. The only restriction to its use has been the difficulty of securing a strong enough light to properly illuminate the glass slides. While the oxy-calcium burner is fairly safe in the hands of the expert, the ordinary householder feels loth to take into his family circle a power which, if not properly controlled, might suddenly terminate not only the lease of his house, but his own lease of life. Some ingenious Frenchman has invented a lamp in which can be used the "safety" mineral oils, and gives a superb light for the purpose mentioned. It is called the "Triplexicon." I recently and repeatedly threw upon a screen a picture eight feet square, well illuminated. This is fully as large as one can ever use in a parlor, and about as large as is ever required in a Sunday-school or lecture-room. In this connection, I was recently told that the muslin screen affords a much more brilliant image if it is lined on the back with black paper. The idea is that, by the screen being thus rendered opaque, the light is retained on the surface and does not pass *through* the cloth.—GEORGE G. ROCKWOOD, in *Art Amateur*.

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OUR readers will note that Dr. LAUDY also indorses the triple-wick lamp.

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FANNIE is a little girl who has a big wax doll as a companion. A few days ago a new sister came to her house, and after a few days she went over to a neighbor's. "Well, Fannie," said the lady, "where's your wax doll?" "Oh," she answered, turning up her nose, "I don't have nothin' to do with wax babies any more. We've got a meat baby at our house now, and that takes up all my time."—*Merchant Traveler*.

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WE extract the above as of special interest to photographers. There is no better present and prospective food for the camera than "meat babies."

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PHOTOGRAPHY of the stars is now a scientific pastime. Alas, another excuse for belated married men!—*Life*.

---

MANY things are laid to Providence that should be charged to Improvidence.



OPTICIAN—"And how do you find the glass eye I put in for you, sir? Satisfactory, I hope—" Old gent, gleefully: "Satisfactory? 'Po' my life, sir, I—I frequently can't tell which is the glass one without taking it out!"—*English Paper*.

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SUPPOSE he should take out the wrong one, how then?

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WE are indebted to the publishers of the *Photographic Times* for a very handsome calendar. The design is particularly beautiful, and we tender our best thanks for this handsome embellishment for our sanctum.

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AMATEURS can now obtain dry plates ( $3\frac{1}{4} \times 4\frac{1}{4}$ ) packed in tin boxes. These boxes are not only good as a means of storing dry plates, but they also make admirable receptacles for the finished negatives obtained upon them.

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THE *Philadelphia Photographer* is out in its first number under the new régime as a semi-monthly. To say that it maintains its old standard means that it is filled with good things.

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WILLIAM W. SHERMAN, son of Prof. William H. Sherman, one of the pioneer photographers of the Northwest, has secured a patent for a process of producing photographs in permanent pigments, having a special reference to photographic impressions for the use of artists. The essential steps are described as follows: Paper, canvas or cloth is coated with a sizing of suitable solubility, to which there is applied, in the form of a fine spray, a pigment suspended in a vehicle (such as a solution of gelatine and bichromate of potash) sensitive to the action of light. The next step is the exposure to light in the usual manner of producing photographic prints from a negative; and, finally, the image is developed by washing away the parts not acted upon by the light. A dotted or "stipple" appearance is produced similar to that in mezzotint engravings.

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A MAN is a fool if he blows his own horn.—*Exchange*. He's a bigger fool if he blows some other fellow's.—*Philadelphia Call*. He is the biggest fool of all if he trusts any one else to blow his own horn for him, as any experienced politician can testify.—*Puck*.

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MR. JAMES E. BRUSH, of the Society of Amateur Photographers of New York, carried off the prize for lantern slides at the exhibition of the Photographic Society of Philadelphia. We also note that MR. W. C. RUSSELL, of Baltimore, took the prize for large transparencies.

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WE note the following announcement in the *British Journal of Photography* for January 1st:

"MR. J. TRAILL TAYLOR, who, as is well known, occupied the editorial chair of this journal for fifteen years, having completed the term of his literary engagement in America, has returned to resume his old position of resident editor, and will, as in times of yore, be glad to receive all friends of the journal, from home or abroad, at the editorial rooms, 2 York street, Covent Garden."



"It may be briefly stated that this change was contemplated previous to the death of Mr. Greenwood, the former proprietor, but could not be earlier carried into effect in consequence of the term of Mr. Taylor's engagements in New York not expiring till the present date.

"Mr. W. B. Bolton, who has ably edited the journal during the past six years, will continue his valued services as associate editor, under conditions which will enable him to devote a large portion of his time to original researches in those branches of the art-science with which his name is so intimately connected."

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WE are indebted to MR. C. GENTILÉ, of *The Eye*, Chicago, for notice of meeting of the Photographers' Association of America, to be held in St. Louis, June 22d to 24th, inclusive. Our readers will make note of the date and be present.

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### STRIPPING NEGATIVE FILMS.

BY MARCUS H. ROGERS.

It is frequently desirable to strip a negative film from the glass, for use in a reversed way, or to strip positives and attach the films to lamp shades, porcelain vases, or other articles—a style of decoration which is not very common, nor yet difficult, and one which will afford much pleasure to amateurs. The films are readily detached by a dilute solution of hydrofluoric acid, because of the solvent action of that acid upon glass. It is sometimes desirable—particularly in the case of large negatives—to strengthen the film by a coating of warm gelatine of easy-flowing consistence, or else coat the plate with plain collodion. After it has become dry, the plate is immersed in the acid solution, an ebonite tray being used, as the acid would injure, if not ruin, a glass one. Half a dram of acid in eight ounces of water is sufficiently strong, but it will be quite as convenient to prepare the acid when required, in the following manner. To two drams of sulphuric acid add three ounces of water, and when cool—the mixture evolving a little heat—immerse the plate in it for a few minutes. Then in the ebonite tray place one dram of sodium fluoride dissolved in six ounces of water. Add to this about an ounce of the dilute sulphuric acid, and transfer the negative to it, when in a minute or two it will begin to frill around the edges, and soon be liberated from the glass. The acid should then be poured off, and the film carefully washed in repeated changes of water, and lastly in equal parts of methylated spirits and water, by which means the stretched or distorted film will return to nearly its original size. The film should then be caught on a waxed or oiled glass, and allowed to dry, care being used to adjust the film without bubbles beneath it. When dry it can be readily detached from the waxed glass. If it is a positive and it is desired to attach it to a lamp shade, it should be trimmed; the shade coated with a layer of thin, warm gelatine; and the film, previously dampened, applied immediately, and pressed or squeegeed into perfect contact. To dampen the film, it should be floated, face downwards, in water and methylated spirits, equal parts, and then raised upon a piece of smooth paper of the same size as the film, and the greater part of the moisture removed by soft blotting-paper. It is then in condition to be pressed upon the gelatine-coated surface of the shade to which it will be permanently attached,

and the paper on the face of the picture can then be carefully removed. For lamp shades the pictures should not be too large, and reduced positives can conveniently be made on transparency plates without difficulty, while lamp shades or vases decorated with familiar scenes, artistically made and applied, will prove a "joy forever" in the amateur's home.

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### OUR PICTURE GALLERY.

MR. HAAS, of Green Cove Springs, send us a collection of 5 x 8 prints of Florida scenery. Two of these are very effective pictures of woodland scenes with the well-known hanging moss, and are very well taken, the moss being quite sharp when we consider how easily it is moved by the breeze. The view of the house, with a group at the gate, is a good piece of architectural work. The camp scene in the woods is also very good. The street view with the horse-(mule?) car is sharp, clean, and very well done as a photograph, giving a very good idea of the appearance of the Southern method of utilizing trees for shading the sidewalks. A view upon the banks of a sheet of water, apparently a lake, is thoroughly picturesque and very artistic in the point of view, and to our minds is the best picture of the collection. A group of palms is an interesting exhibit of this characteristic tropical foliage, and the two crocodile hunters are also interesting. From a photographic point of view there is little fault to be found with the pictures; the toning is rather uneven, and one or two are flat from over-toning.

MR. M. A. Morehouse, of Watertown, N. Y., sends us a number of prints, and says: "During the heated term I went out and induced nature to smile through the one eye of my camera, and I send you a few of those smiles." To get one of these smiles he went out of the back door, if we may judge from the picture, and caught a cat asleep with her three kittens. This picture is uncommonly life-like and thoroughly well done. "Attateka Camp, Chestertown, N. Y.," is a picture of a camping party in the pine-woods. It is sharp and well done as a photograph, and the only fault we can find with it is, that the people under the shadow of the sloping roof should have been made to come out more into the light, and then the details of the faces would have been better. "The Old Stage Road, Watertown, N. Y.," is one of those views that scarcely ever prove satisfactory—the distance is too long. Much could be done with the negative of this picture by a little manipulation in the printing. By means of a card with an oval hole cut in it, used to mask the negative, and good sunlight, the distance could be printed out until well started, and afterward the whole printed as usual. That is to say, mask the thin parts of the negative, taking care to keep the mask moving all the time, otherwise a print of the hole will show on the finished picture. If that is a telegraph pole along the road-side, and has a wire strung upon it, the wire should show in the print if the negative caught it; in our proof it does not show. The view "Below the Falls" is very good, and we can find no fault with it. An instantaneous view of this last would have been more effective as a picture.

From Messrs. Safford & Co., of Norwich, Conn., we have an instantaneous view upon Main street, taken from the windows of the Pyro Club by Mr. F. H. Allen, the President. The negative work is good, but the print is over-toned and consequently flat.

Moore, of Seattle, W. T., sends us a number of children's portraits, cabinet size, that are excellent. The artistic posing, the good lighting, the happy expressions caught, all go to make up what are first-class children's portraits. We consider these among the best children's pictures we have seen lately.

W. G. Mann, of Waukesha, Wis., donates a number of examples of his work in cabinet portraits. All are good, soft pictures and artistically finished. A little girl in a white cap is very prettily posed and makes a gem in portraiture. Two girls, one with the hands resting upon the shoulder of the other, is a very graceful piece of posing and makes a fine picture.

E. A. Stevens & Co., of Portland, Me., send a print taken with a cheap outfit by a young boy. The picture is a small sloop full sail, and is a clean, sharp piece of work. We have not often seen such good work for a beginner in photography. The print is too flat and leaden for our taste.

Mr. Benjamin Wilsey sends us a number of Florida views. The Engineer Corps of the Jacksonville and Santa Fé Railroad; the Log Train; the Commercial Hotel, Starke; the Kentucky House, Starke; Col. Shipman's house; and Dr. Bryan's grove, are all good. But Dr. Todd's grove is quite poor; the negative was apparently thin and dirty, if we may judge from the look of the print sent. All the prints are a little inclined to be flat, although most of them are very good.

J. A. French, of Keene, N. H., has a number of 5 x 8 gems, which he donates us. "Cheshire Railroad Bridge, Keene, N. H.," is a fine piece of photographic work. It is a view of a stone arch, over which a train of cars is passing. The view through the bridge gives a very picturesque effect and is well caught. The view of the locomotive on the bridge is quite good; but the shutter did not move quite quick enough to make it perfectly sharp. The tone of the print is very good. The group of officers at Camp Langdon, Concord, is a good sharp photograph, but the print is too flat. The iron railroad bridge at Harper's Ferry is very good, but the picture would look better if the train of cars running along the right-hand side of the picture was cut out. The Cattle Group is as good a piece of instantaneous work of this character as we have seen; it is excellent. "Boat Scene of the Ashuelot" is a gem. The reflection is well caught, and the vignetting makes the picture very artistic. But the best picture of this interesting collection is "Glen Ellen Cascade," which is an exceedingly pretty view of a waterfall in a woodland ravine. We hope to illustrate the BULLETIN with prints from this negative at an early date.

Samuel C. Partridge, of San Francisco, sends us with "A Merry Christmas," a beautiful 6½ x 8½ print of a group of cattle in a woodland scene. This is another one of those artistic gems that are so good to look upon. The quiet stillness of the scene is well brought out in the foliage, and the grouping of the cattle makes an uncommonly pretty picture. The shadows give that idea of coolness so grateful in a warm season, and the whole picture has a still calm about it that is thoroughly enjoyable.

W. C. Russell, of Baltimore, seems to delight in getting views of that interesting spot, Harper's Ferry. Some time ago he sent us a fine view on an 8 x 10 plate, and now he gives us a magnificent picture, 11 x 14, which surpasses in excellence of detail his former fine work in this direction. We understand that copies of this beautiful view of a most interesting locality are obtainable from our publishers.



## PHOTOGRAPHY FOR THE NEWSPAPERS.

BY STEPHEN H. HORGAN.

[Read before the Photographic Section of the American Institute.]

I CAN assure you that I fully appreciate the honor your distinguished body has conferred in extending an invitation to contribute a paper, and regret that time could not be obtained to prepare one more worthy of your consideration. Of the following, it can be said that if the subject matter is not interesting, it will at least have its brevity to commend it. Your worthy body has discussed in detail every phase almost in the production of a photograph. The object of this paper is to call your attention to a valuable use you might often make of your finished work. Amateurs throughout the country are piling up thousands of valuable negatives, proofs of which are only seen by their immediate friends.

In fact most amateurs lose interest in a subject once the negative is secured and a proof taken. They turn their attention to fresh conquests, when often the negative in hand is worth the dozens to come. This restless, unsatisfied spirit is a good thing in its way ; but they should not hide their accomplished work—let the public see it. Now, the best medium to bring it before the public is the newspaper, and the latter is gradually reaching a position to use the contributions of the camera.

It may be noticed that the newspapers of the whole country are endeavoring to use illustrations. This demand is in the form of a revolution, and is bound to succeed, for it has a correct principle back of it, which is this : A picture is the quickest and most agreeable method of conveying an idea or impression. In this rapid age, people want to grasp a situation, or get their impression of a public man at a glance. A picture tells the whole story at once, and in a better way sometimes than columns of type. Hence the necessity for illustrations in the press.

It is true that the current newspaper cuts are not very artistic. In making the majority of them the newspapers depend on draughtsmen. Skilled draughtsmen being scarce and alleged artists plenty, the result is the atrocious cuts in the press sometimes. Still an improvement is gradually taking place in the quality of newspaper illustrations, and this would be hastened would the photographer but give a helping hand.

The way to proceed might be something like this : Find, first, if you have among your negatives, or in your vicinity, a subject that is likely to be of national, sectional, or local interest. This subject may be a portrait, residence, a recent event, or accident. By way of illustration, I might mention a few of the thousands of subjects around us in which the public of the whole country would be interested.

There is John C. Fremont, the "Pathfinder," one of the great characters in our history, who has probably never been photographed since he was a candidate for the presidency in 1856. He comes to his office on Broadway every day, yet no one thinks of securing a negative of him. The residences of such men as George William Curtis or Charles A. Dana are of general interest, because even the exterior of a house reflects somewhat the character of its inmate. From the site of the proposed bridge across the Kills at Staten Island to the shattered André monument; from the Croton Valley, where the largest dam in the world



is about to be constructed; along the line of the new Aqueduct to the Crematory at Fresh Pond, Long Island, plenty of subjects for the camera may be found which the people of the whole country would like to see; and the further away from New York, often the greater the interest in these scenes.

How true it is that we do not appreciate that which is within our reach.

On the death of the late General Robert Toombs, of Georgia, recently, a telegraphic application was made to the local photographer for a photograph of the General's house. The answer received was that he had never thought of making it. How interesting to us, North, would be pictures of the homes of those great war figures, Toombs and Jefferson Davis; yet it is likely that the latter has never even been photographed. In the town of Springfield, Ohio, is a rapidly decaying structure, now used as a livery stable. It was once a church, and the one in which Henry Ward Beecher preached his first sermon. The local photographer would no doubt dislike to waste a plate on it. Still it is just the sort of picture the public would like to see. Innumerable examples might be given of picturesque subjects of historical interest at which the camera is never aimed, while much good ammunition is wasted on landscapes or figures of no particular interest.

Having secured a photograph of interest, select a paper that uses illustrations and whose readers most likely would be pleased with your subject. Address a letter to the managing editor of the paper, stating that you have, or contemplate making, this subject and will furnish descriptive matter; or, if it is a subject of "news" interest, liable to become valueless by delay, mail your print and descriptive matter immediately, and you will receive credit or pay for your trouble.

By giving this matter a little thought, photographers will soon discover which are the most taking subjects with the press; and I can assure you the press and the public will appreciate them. The newspaper aims to give a faithful picture of current history. How much more truthful would that record be if it were made by the unprejudiced and impartial camera. It has been my privilege to know something of the perplexity of an editor, when the telegraph brings him the announcement of an occurrence at some distant point of which a photograph or portrait should be secured.

He does not know the name, address or ability of the photographer nearest to the scene, so he has to dispense with a picture of it. While, if the photographer in the vicinity was thoughtful enough to send a print, it could be used with profit to both. It is for this reason that photographers should give a little attention to the wants of the press. By so doing they will often learn to make a more intelligent use of their cameras, and by contributing to the pleasure or intelligence of the public will experience, without doubt, the satisfaction such an act brings.

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*All communications for the columns of the BULLETIN should reach us on Monday preceding the day of issue, to insure their publication at that time.*

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A TEN-YEAR-OLD Rochester boy, on the cars coming to Troy the other day, became hungry about 11 o'clock and began an attack upon the bountiful lunch that had been prepared for him. A gentleman who sat behind him was moved to remark: "My boy, if you eat much now you won't have any appetite for your dinner." To which the smart little fellow replied: "Well, I guess if I haven't any appetite I shan't want any dinner." The gentleman had no more to say.—*Troy Times*.

## A NEW TIME SHUTTER.

BY E. F. BIRDSALL.

[Formerly a Member of the Society of Amateur Photographers of New York.]

THIS shutter was exhibited at the meeting of the Society of Amateur Photographers of New York on November 10, 1885. The materials employed in its construction were parts of an old clock and a metal drop combined, with a wooden case fitting on to the lens tube.

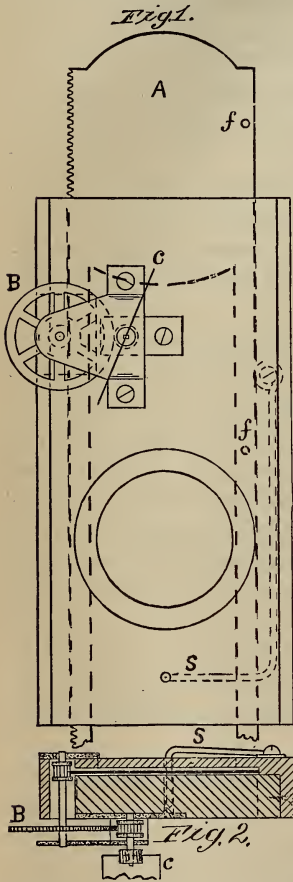


Fig. 1 is a rear view, the double circle near the lower end being the aperture cut through the wood case for the lens tube. Fig. 2 is a cross section showing plainly the train of clock-work. A is a metal drop slide made of brass, which slides freely up and down in the wood case, and is provided with an aperture about  $4\frac{1}{2}$  inches long, the shape being seen in the dotted lines. On the left edge is cut teeth, while near the right edge are two small holes, *ff*, the upper one being used to retain the shutter open for focusing, by inserting a small pin in the same, which rests on the top of the shutter case.

When the shutter is elevated, so that the lower portion covers the lens opening, the pin is inserted in the lower *f* as it comes on a level with the top of the case.

S is a spring wire, its lower end being bent to fit into a hole in the shutter case. As the shutter is raised to be set, the wire, S, is drawn out by the fingers to permit the shutter to pass, and when released presses very slightly against the front face of the same. The cog teeth on the shutter engage in a pinion, on whose shaft is a large spur wheel which gears into a second pinion, a detachable metal fan, *c*, being placed at the end of its shaft. In operating it, the shutter A is raised until the lower hole *f* reaches the top of the case (Fig. 1); a pin is inserted which holds it ready. As the loose pin (which may have a thread attached, enabling the operator to be at some distance) is

pulled out the shutter descends, at the same time rotating the gear wheel B, and fan C, which necessarily retards its descent, thereby making a uniform speed, and, in consequence, a uniform exposure. As soon as the lower whole portion of the shutter passes, in its downward movement, the wire S, the latter at once flies into the hole in the case across the path of the shutter, stopping it when the upper end of its aperture strikes the pin. By that time the upper blank portion covers the lens. It will be seen by making the fan, *c*, larger or smaller, the speed can be easily regulated to any desired time, and it is proposed to have sliding arms on the fan so that it may be enlarged or diminished at pleasure.

By using a fine black thread to pull the releasing pin, it cannot be seen in a picture, and therefore has an advantage over the pneumatic release. The shutter is not affected by the wind and does not jar the lens.

The only trouble the inventor has experienced has been when taking groups in which were members of the fair sex, when the unassisted movement of the shutter and the slight noise of the wheels excited their mirth. By moving the slide two or three times beforehand, the novelty wore off and the difficulty was avoided. The shutter will allow a range of exposures from a fraction of a second to many seconds.

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### ANOTHER AMATEUR'S EXPERIENCE IN TONING.

BY P. H. MASON, M. D.

[Read before the Society of Amateur Photographers of New York.]

My experience in toning silver prints, as well as in general photography, has been short and interesting; in fact it is just about the age of this society.

The results obtained during this experience have probably not differed from those that every amateur has at one time or another secured; *i. e.*, anything from a fiery-red to a pale, sickly blue.

I believe that in this short space of time I have tried toning-baths made up from almost every formula ever published, both foreign and domestic; and in that existed a great mistake—shifting from one formula to another if immediate success did not crown my efforts. However, I finally settled, as we all will in course of time, and am now thoroughly convinced of a few facts which I am glad to give for what they are worth.

In the first place, I am a firm believer in the alkalies. Starting with a print that has been silvered on an alkaline bath, I have no desire to have it become acid throughout any of the different stages of washing, toning or fixing. If using ready sensitized paper, fume it with ammonia for half an hour before printing.

Gold is the foundation of the toning bath, and the necessity of its good quality cannot be gainsaid. We read of formulæ calling for two or four grains of chloride of gold to sixteen ounces of water, etc. It does not say that it shall be chemically pure chloride, or two or four grains of the gold and sodium commonly purchased at any stock house, and which we know is only one-half gold. The uncertainty of the quantity meant is perplexing, to say the least, and the misguided amateur often has that to thank for his disappointment.

The method that I have found best during the past season to obtain a solution of chloride of gold that is reliable, has been as follows: Taking a two-and-a-half dollar gold coin, or its equivalent in dental gold, which is about fifty-six grains of the pure article, cut it up and add, in a large porcelain dish, three ounces of a mixture composed of three parts nitric and five parts muriatic acid. By heating on a water-bath, the chemical action takes place more rapidly.

I say "on a water-bath," because a higher degree of heat than that of boiling water is uncertain, and is apt to change the auric chloride into aurous chloride, a compound not wanted, and one that is insoluble in water.

Evaporate the solution to a half-ounce, or to crystallization if you choose, then add warm water to the extent of eighteen ounces. You will now have an acid solution of chloride of gold that will keep, if not used, for a lifetime, and will represent on a rough calculation about three grains of pure chloride to the ounce.

Neutralizing this gold for toning purposes is best done, just before use, by adding to the quantity desired to make up the toning bath (my experience is



that one-half a grain of this gold to a sheet of paper is quite sufficient), enough of a saturated solution of bicarbonate of soda to turn red litmus faintly blue.

This neutralization should be done very carefully, giving time between the drops for the soda to thoroughly permeate the solution of gold before testing it.

Now for the alkaline part of the toning bath. Into two quarts of water put two ounces of bicarbonate and three drams of acetate of soda. Make this a stock solution subject to draft, and let stand at least twenty-four hours before using.

With the prints well washed in several changes of plain water, in order to nearly or quite rid them of the free silver nitrate, take as much of the soda solution as will be required, and add the gold, as above neutralized, in quantity before stated, according to the number of sheets of paper printed, and you will be ready to tone. For the first time or two this bath will work slowly. Moderate heat will quicken the action somewhat, and this can be obtained by placing it over a small oil or gas-stove. Almost any tone desired can be accomplished, from the warm brown or sepia to the purple or black. When one gets accustomed to its use he can print more intelligently, so to speak, with an eye to the toning—deeper prints being necessary for the purple or blacks. For a bright, sunlit landscape, do not expose too long, and tone to a warm brown; while a cold, bleak subject should be carried to the grayish tint, allowing always for slight bleaching in the hypo.

Many have pursued the plan of acidifying the prints in one of the washings before toning. I fail to see the necessity therefor, as by starting with a few, and adding at intervals three or four, and comparing them in the bath, the difference is readily noted and the completed tone easily determined.

Do not throw this bath away. It will keep an age. It may at times look black, muddy or dirty, but it will work just the same. An occasional addition of a little of the stock soda solution *after* toning, other than the necessary gold just before use, is all the attention it requires.

If, after using for some time, a precipitate forms in the bottle containing it, decant off the clear portion of the liquid for use, and save the deposit for valuable waste.

I have been perhaps more explicit than necessary for some, in the method of the preparation of this bath. I might have simply written the formula and let it suffice; but if we are to learn anything from each other, particularly the younger from the older, the little details of the processes to be taught are all important—not only *what* to do, but also *how* to do it.

Doubtless there are many other toning baths that will give equally pleasing effects. I do not claim any superiority or even originality for this one. It is simple in its making and certain in its results.

From the toning bath the prints go into clear water and thence to the hypo, which is made up fresh each time, and consists of four ounces of a saturated solution of hyposulphite of soda to a quart of water. They will have a tendency to slightly redden at first, but an immersion of twenty minutes will restore the rich color of tone. A print may be said to be well fixed when, viewed by transmitted light, it fails to show any spotted or granular effect in the clear whites other than that of the paper itself. A short bath in a weak solution of common salt, and we have no trouble with blisters.



The prints should be washed in running water for at least three hours, and, if the force of the water is not sufficient to keep them moving, they should be turned over occasionally by hand.

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## ELIMINATION OF HYPOSULPHITE OF SODA BY THE SALTS OF LEAD.

BY CHARLES EH RMANN.

[Read before the Photographic Section of the American Institute.]

THE employment of the salts of lead for removing the last traces of hyposulphite from negative plates or paper proofs by effecting a chemical decomposition, has been condemned by acknowledged authorities in photographic chemistry. Notwithstanding this, inquiries are made almost daily as to the action that takes place when lead salts are used, and the effects they may possibly produce upon our pictures and their permanency. Considering first the opinion expressed by others, I will quote what Dr. F. Stolze, of Berlin, says on the subject:

“Acetate of lead has been used in practice as an addition to the water in which paper proofs are washed, for the purpose of decomposing the hyposulphite salts; to remove which, by simply washing with pure water, requires, comparatively, a long time.

“Acetate of lead in solution, even when closely filtered, turns turbid by further dilution. For this reason another salt has been employed—the nitrate—which remains clear and limpid in all states of concentration. When solutions of either of these two salts are added to a solution of hyposulphite of soda, or *vice versa*, a bluish-white precipitate occurs—hyposulphite of lead—while nitrate of soda or acetate of soda, whichever the case may be, will remain in solution. The precipitate is, however, soluble in an excess of the hyposulphite or the lead salt.”

From these facts alone, we might infer what action may take place when such interchanges are produced, either within the body of a gelatine film or the porous paper, and what results may be expected. Iodide of starch added to the mixture is at once discolored if an excess of the hyposulphite be present, and iodide of sodium is formed; while iodide of lead is formed with an excess of the lead salt, the hyposulphites being changed to tetrathionates ( $S_4O_5$ ). Thus we can see that, under the most favorable circumstances, we only form the alkali salt into a lead salt, a compound by no means easier removable than the former. The facility with which these salts change into sulphides, is shown when a mere trace of a soluble silver salt is added to some of the well-washed precipitate. It rapidly becomes yellow, brown and black.

Different results from these, when a lead salt is used for washing paper, are evinced by gelatine plates. A fixed plate strip, after having been washed in pure water for five minutes, was placed in a test tube with fresh water and a few minims of a lead solution (1 to 10) added, when the liquid turned turbid at once. After another washing, and replacing the plate in fresh water, iodide of starch discolored at once, but after repeating the operation several times, only a slight discoloration took place, which may be considered either a partial removal of the salt; or, what is more probable, the gelatine had enveloped the lead salt so closely that the iodide could not possibly act upon it, especially as there had been no solvent for the lead salt in the wash-waters used successively.

There is a bare possibility of removing, by long washing, the lead salt redissolved in its precipitant, if that redissolution has really taken place. The lead solution added to wash-waters is, however, in most cases insufficient to cause redissolution in a short time within the film. The insoluble hyposulphite of lead becomes imbedded within the gelatine, and is held there by its continuous swelling so closely imbedded, that more of the lead salt in solution, the acetate or the nitrate, can never have any access to it, and it will remain there.

A number of experiments have shown me that hyposulphite of lead changes in light; it assumes color, it decomposes. By adding hyposulphite of soda in small quantities to a lead solution, you perceive the bluish-white precipitate mentioned above, which is the hyposulphite of lead. [Precipitation made and shown.] In a second test-glass will be observed a precipitate of a yellowish, muddy-gray color. That is carefully washed hyposulphite of lead exposed to daylight for eighteen days. A decided change has taken place.

In No. 3 you find a part of the same precipitate with the addition of a few grains of dissolved gelatine, and also exposed to light for eighteen days. The color is much darker and of a different hue. No. 4 is precipitated from a one and a half gallon negative fixing bath, 1 to 8. It turned black almost immediately on exposure. From fifty to sixty-five 8 x 10 plates had been fixed in the bath. No. 5 is from a paper positive fixing bath, in which probably eighteen to twenty sheets of paper had been fixed. Precipitate, more brown than the former, changed color somewhat slower than No. 4. Both were exposed for six days. No. 6 is hyposulphite of lead redissolved in hyposulphite of soda; turned as black as it is now within half-an-hour's exposure to direct sunlight. No. 7 is another part of the same solution kept in total darkness for four weeks. The voluminous deposit shows, without question, that a decomposition has taken place.

Of all my results, none has so thoroughly surprised me as that of No. 7, where light effected the change of color almost instantly. The pure, well-washed salt changes in light, and more quickly and decidedly when organic matter is present.

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#### THE CONVENTION AT ST. LOUIS.

St. Louis, January 6, 1886.

#### *Directors' Room, Exposition Building.*

A MEETING of the St. Louis Photographic Association was held to-night, to which all stock dealers, dry plate manufacturers, professional and amateur photographers of this city were invited. The meeting was well attended, and opened by President G. Cramer at the usual time. Mr. Cramer stated that the purpose of it was to consider whether it would be advisable to raise some funds to entertain our visitors at the next convention. The idea was heartily approved, and in a short time nearly \$1,000 were subscribed. Mr. Somerville was then elected Treasurer. Not all the St. Louis photographers being present, a committee was appointed to see them and solicit more contributions. Another committee was appointed to devise some plans how to provide some fun for our visitors, and to report at the next meeting. A motion made by one of the members

compete for any of those prizes offered at the next convention, yet promise to do all in our power to make it a grand success by as fine an exhibit as possible.

After this, adjournment.

R. BENECKE,

*Secretary St. Louis Photographic Association.*

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### OUR ILLUSTRATION.

THE illustration accompanying this issue of the BULLETIN we selected as being a subject of general interest, that of the Flood Rock explosion. We regret very much that the execution of the illustration is not what we would wish it, but it was hurried through in a limited time, and we were forced to use it or leave the BULLETIN without an illustration. We therefore crave our readers' indulgence in this instance, and hope that in future there will be no necessity of making such an apology.

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### THE MAGIC LANTERN AND ITS APPLICATIONS.

BY L. H. LAUDY, PH.D.

(Continued.)

BEFORE we leave the question of sources of illumination, it will be well to discuss the application of sunlight to the lantern.

With a window facing the south, and a properly arranged heliostat, this is one of the simplest methods of illumination, for by this means we have always parallel rays, and a simple single condenser is all that is essential for use. Sunlight can of course be used with the ordinary forms of condensers, but these combinations are not necessary.

The heliostat in its simplest form consists of a mirror so arranged that the sunlight will always fall upon the condensers. To insure this condition, two motions of the mirror are necessary, one of which is in a plane parallel to the face of the condenser, while the other is in a plane at right angles to the first. In some of these the motion is imparted by clockwork.

Among the objections to the use of the sun as a source of illumination, is the uncertainty of sunlight and the fact that its use is restricted to daytime.

Having discussed the sources of light available, the next thing to consider is the lantern proper.

The condensers have for their function the collection of as much light as possible from the source employed and its transmission through the picture. To accomplish this, the condensers should subtend as large an angle as possible at the source of light; that is, they should be large and their distance from the light (that is the focal length) should be short. Single lenses of large diameter are generally of long focus, and a good condenser should have considerable diameter. To reduce the focal length, two or more lenses must be used to produce a good, convergent bundle of rays.

The condensers have been very much improved of late years, and the better class of lanterns are now provided with such combinations of lenses that you can produce convergent or parallel rays, making it possible to polarize the light



when needed for experiments of that character of which mention will be made further on.

The condensers may be divided into four classes, and are called Cresson, Morton, common and French, the two first taking their names from the inventors. Dr. Charles Cresson, of Philadelphia, constructed an excellent combination, consisting of three lenses. The first is a plano-convex 4 inches in diameter, the second a meniscus, and the third a bi-convex. The two last are  $4\frac{1}{2}$  inches in diameter. The error of this combination is very small; the marginal and axial rays coincide within one-tenth of an inch; and the cone of light is about  $65^\circ$ . The only objection to the general introduction of this combination is its cost of construction. (Fig. 1.) To complete this condenser, a lens, 12 or 15-inch focus, was placed in front for a certain class of experiments.

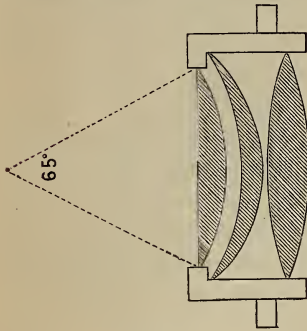


Fig. 1.

Professor Henry Morton, of the Stevens Institute, who has done so much towards perfecting the lantern, constructed a combination of lenses in which all are plano-convex, reducing the cost of the Cresson combination more than one-half, and at the same time maintaining its efficiency. The Morton combination consists of three lenses, the first of which is 18-inch focus,  $4\frac{1}{2}$  inches in diameter, the second 14-inch focus, and the third 16-inch focus. The last two are 5 inches in diameter. The first two lenses have their plane surface turned towards the light, the third its plane side from the light. The cone of light is about  $45^\circ$ , and the back focus about 3 inches. The third or outside lens is so mounted that it can at any time be removed in case parallel rays are required, which is necessary for the vertical attachment or polarized light, allowing a reflecting surface to be placed between the condensers and collector.

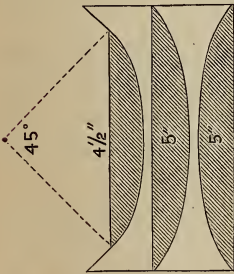


Fig. 2.

(Fig. 2.) It is less perfect than the Cresson in spherical aberration, but with the use of the lime light, in which the surface is large, it works well enough for all practical purposes, and is now used in most scientific lanterns.

The ordinary form of condenser consists of two plano-convex lenses of rather short focus, and are so mounted that their convex sides almost touch. The focus of the combination is about 3 or  $3\frac{1}{2}$  inches, and is the usual form used in lanterns for the projection of pictures only. (Fig. 3.) They are less expensive than the triplet form; are more compact; and fully meet the requirements demanded of them. They range in diameter from  $2\frac{1}{2}$  to about 6 inches, the usual size being  $4\frac{1}{2}$  to 5

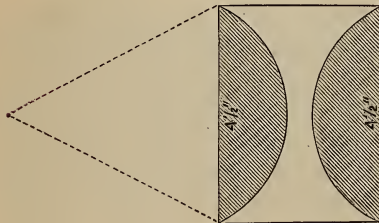


Fig. 3.

inches.

The French condenser consists of two lenses, a plano-convex and a double



convex, the surface of which is not of the same radii, as the accompanying cut (Fig. 4) will show. These are used in many of the imported lanterns and work very well. The only care in using them is the careful centering of the light to prevent a dark field or fringes.

Those who attended Professor Tyndall's lectures delivered in 1871, must have noticed that his production of parallel beams of light, such as are necessary for the projection of Lassaious' figures with tuning-forks, and other physical experiments requiring a small pencil of light, was most perfect. Yet his picture projections were imperfect, from the fact that the condensers were not arranged to produce the best effects for picture projections. In fact they were the uncorrected lenses made by Duboscq, and when a small pencil of light was required, a metal plate was placed against the back condenser with an opening or diaphragm of small size that reduced the error of the lens to that of one of an equal size to the opening; whereas, had he used a better combination of condenser, this would not have been necessary.

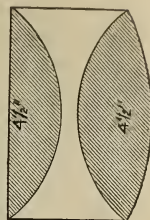


Fig. 4.

The next part of the lantern that we must notice is the objective, or means of producing a magnified image of the picture or object. Its first function is to produce a magnified inverted image of the picture or object. In the cheap form of lantern this is simply a small double convex lens of short focus. A good objective is the portrait combination which is corrected for spherical and chromatic aberration, an essential in the objective, although not so necessary in the condensers. Its second function is to bring the marginal rays of each pencil of light from the condenser to coincide with the axial rays. Therefore, the more concentrated the cone of light, the nearer in each pencil will be the marginal rays to the axial rays, and the more perfectly will the image be projected.

It is only recently that opticians have devoted any attention to the construction of lenses specially designed for lantern objectives, and it is to be hoped that their labors may be crowned with success, for many of the portrait combinations sold with lanterns fail to produce sharp or well-defined pictures. The use of a single uncorrected lens is confined to experiments in spectrum analysis and polarized light, and a few other physical experiments. This uncorrected lens should never be used for projecting pictures.

The size of the image produced by the objective depends upon its focal length and the distance of the lantern from the screen. The greater the distance the larger the picture and less the light, which latter diminishes inversely as the square of the distance. Thus, a picture ten feet in diameter will be twice as well illuminated as one fourteen feet, and a twenty-foot picture will have diminished four times in intensity. For a long distance and a large screen, twenty-five feet or thirty-five feet in diameter, the light can be somewhat increased, yet the limit is soon reached, being determined by size of opening of jet, and the consumption of the gases, after which there is no further gain of intensity. Some prefer to place the lantern at a long distance, and use large and long focus lenses, while others have the lantern near at hand and use short focus objectives; the choice of the two positions depends upon circumstances, location and convenience.

The pictures magnified are usually transparent, and the images are formed by the rays which have been transmitted through them. The linear magnifying power is the number of times an object is magnified; the superficial magnifying power relates to the entire surface. This power should always be expressed in linear measurement, as the superficial area is apt to mislead.

*(To be continued.)*

[From the Bulletin, Sydney, Australia.]

# AMATEUR PHOTOGRAPHY—A FEW HINTS.—(Continued.)



The choice of a composition is everything. Nature sometimes places obstacles in the way of obtaining an eligible picture, but seldom will the amateur encounter any of so serious a nature but may be overcome by industry, pluck and perseverance.

The first thing to be noted by ladies and gentlemen who purpose becoming amateur photographers is this: no ray of light must be allowed to fall upon a sensitive plate, else it will be destroyed. Photographic operations must therefore be conducted in a room into which no light is admitted but what passes through a ruby-colored window.



It sometimes happens that the best point of view is to be obtained from the water. However, the true enthusiast does not mind a little thing like wet feet.



Only it is well to guard against too long exposure, especially if the tide be coming in.

# ANTHONY'S Photographic Bulletin.

EDITED BY

Prof. C. F. CHANDLER, Ph.D., LL.D.,  
Aided by ARTHUR H. ELLIOTT, Ph.D., F.C.S.,  
and a corps of practical assistants.

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Advertisements should reach us not later than the Monday preceding the issue for which they are intended, otherwise we cannot promise to publish them in the succeeding number. It is also necessary to notify us of any alteration before the date above mentioned, and to state for what period the advertisement should be continued—whether for one, six, twelve or twenty-four issues.

*E. & H. T. ANTHONY & CO., Publishers.*

## MINNEAPOLIS AMATEUR PHOTOGRAPHIC CLUB.

THE regular monthly meeting of the club was held at the club room, Monday, January 11th, but as only six members were in attendance, owing to the "intenseness" of the mercury, very little business was done. The award of the competition prize was postponed until the February meeting. We hope before that time to have secured some negatives of the St. Paul Ice Palace and the Toboggan Slides that may be interesting for exchange with our Southern friends.

R. D. CLEVELAND, *Secretary.*

## PACIFIC COAST AMATEUR PHOTOGRAPHIC ASSOCIATION.

THE regular meeting of the Pacific Coast Amateur Photographic Association was held on January 7th, at their rooms, 318 Pine street.

*President* SMITH in the chair.

Minutes of the last meeting read and approved.

The Committee on Exhibitions reported considerable progress, and invited discussions

on the subject of a lantern exhibition for the opening night.

Mr. Virgil Williams, on behalf of the Art Association, offered the use of the large hall and stage adjoining the exhibition room.

Several members promised to furnish slides.

A motion was carried unanimously, that a lecture and lantern entertainment be given on the opening night.

The *Corresponding Secretary* announced that he was in communication with several amateur societies upon the subject of the club exchange of prints, and that it was probable some organization would soon be effected to facilitate said exchange.

Mr. Howe exhibited a new revolving shutter, which combined speed and freedom from jar, with a very ingenious arrangement for regulating the tension.

Mr. Wagoner passed around a number of views on the Tuolomne River.

Mr. London and Mr. Lowden also showed several specimens of late work.

There being no further business, the meeting adjourned, to hear a paper on Lenses by Dr. Passavant.

The lecturer was listened to with great interest and attention.

It is impossible at this time to send the Doctor's paper for publication, as a large number of drawings and diagrams were used.

W. B. TYLER,

*Corresponding Secretary.*

## PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.

### LIST OF AWARDS OF DIPLOMAS AT THE EXHIBITION OF PHOTOGRAPHS.

THE Board of Judges report as follows:

In view of the excellent quality of the work shown, and the variety in the sizes of the pictures, some of the classes have been subdivided, so that proper recognition might be given to the most meritorious exhibits.

Class 1 (A). Landscapes, 11 x 14 and over, by professionals, to W. H. Jackson & Co., Denver, Colo.

Class 1 (B). Landscapes, under 11 x 14, by professionals, J. P. Gibson, Hexham, Eng. Five of the pictures exhibited by Mr. Gibson have already been awarded eight prizes at English exhibitions.

Class 2 (A). Landscapes, 8 x 10 and over, by amateurs, George Bankart, Leicester, Eng.

Class 2 (B). Landscapes, 6 1/2 x 8 1/2, by amateurs, John G. Bullock, Philadelphia.



Class 3. Landscapes, 5 x 7, by amateurs, Robert S. Redfield, Philadelphia.

Class 4. Landscapes, 4 x 5, by amateurs, J. H. Burroughs, Philadelphia.

Class 5. Marine views—Surf, by professionals, no award.

Class 6. Marine views—Sail, by professionals, G. West & Son, Gosport, Eng.

Class 7. Marine views—Surf, by amateurs, Prof. Henry A. Rowland, Baltimore.

Class 8. Marine views—Sail, by amateurs, C. A. Pancoast, Philadelphia.

Class 9. Figure compositions, over 5 x 8 inches, by amateurs, George B. Wood, Philadelphia.

Class 10. Figure compositions,  $4\frac{1}{4} \times 6\frac{1}{2}$  to 5 x 8 inches inclusive, by amateurs, George B. Wood, Philadelphia.

Class 11. Figure compositions, under  $4\frac{1}{4} \times 6\frac{1}{2}$  inches, by amateurs, George B. Wood, Philadelphia.

"Figure compositions" are to include groups and all pictures in which one or more figures make the principal interest of the picture, and which are not included in the "Special Composition," Classes Nos. 15, 16, 17 and 18.

Class 12. Landscapes, by ladies, Miss B. Snow, Brookline, Mass.

Class 13. Marine views, by ladies, Miss E. M. Tatham, Philadelphia.

Class 14 (A). Figure compositions, by ladies, Miss Jessie Gibson, Glasgow.

Class 14 (B). Interiors, by ladies, Miss I. R. Hooper, Boston.

Class 15. Cottage Door, special composition, W. I. Shoemaker, Philadelphia.

Class 16. Wayside Fountain, special composition, C. R. Pancoast, Philadelphia.

Class 17. Village Smithy, special composition, W. L. Shoemaker, Philadelphia.

Class 18. Ploughing, special composition, no award.

Class 19. Animals, Dr. H. M. Howe, Philadelphia.

Class 20. Still Life, S. Fisher Corlies, Philadelphia.

Class 21. Flowers, Fruit, etc., S. Fisher Corlies, Philadelphia.

Class 22. Trees, John C. Browne, Philadelphia.

Class 23. Snow and Ice, John E. Dumont, Rochester, N. Y.

Class 24 (A). Architecture, 8 x 10 and over, G. Bankart, Leicester, Eng.

Class 24 (B). Architecture, under 8 x 10, J. P. Gibson, Hexham, Eng.

Class 25 (A). Interiors, 8 x 10 and over, W. H. Jackson & Co., Denver.

Class 25 (B). Interiors, under 8 x 10, C. B. Pancoast, Philadelphia.

Class 26. Sculpture, G. Bankart, Leicester, Eng.

Class 27. Machinery and other manufactured objects, Frank Bement, Philadelphia.

Class 28. Photo-micrographs, Dr. G. A. Pier-sol, Philadelphia.

Class 29. Enlargements, Albert Moore, Philadelphia.

Class 30. Instantaneous Effects, not otherwise classified, George Lemaitre, France.

Class 31. Platinum Prints, William Willis, Bromley, Eng.

Class 32. Gelatino-Bromide or Chloride Prints, no award.

Class 33. Porcelain pictures, no award.

Class 34 (A). Transparencies, large, W. C. Russell, Baltimore.

Class 34 (B). Transparencies, small, W. S. Bell, Pittsburgh.

Class 35. Sets of six lantern slides, negatives and slides to be made by exhibitor, J. E. Brush, New York.

Class 36. Sets of six to twelve pictures, taken in a foreign country or by a foreign exhibitor, Dr. E. Wallace, Jr., Philadelphia.

Class 37. Pictures by any new process not before publicly exhibited, no award.

Honorable mention. W. W. Winter, Derby, Eng., "Figure Studies;" C. H. James, Philadelphia, "Luray Caverns by Electric Light."

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## PHOTOGRAPHIC SECTION OF THE AMERICAN INSTITUTE.

MEETING January 5th, *President* NEWTON in the chair.

The communications received were ANTONY'S PHOTOGRAPHIC BULLETIN, the *Eye*, *Photographic Times*, and the *Journal of the Transactions of the Photographic Society of Great Britain*. Also a work on the Positive Paper Process on Gelatinized Paper, by Dr. E. A. Just, of Vienna.

The usual vote of thanks for the periodicals, and a special vote of thanks for Dr. Just's pamphlet were given.

The Executive Committee reported that at the next meeting, Messrs. Van der Weyde, Miller and Ehrmann would take part.

Dr. LAUDY reported that the trustees had accepted the report of the Committee on Magic Lantern in a very liberal manner, and had agreed to purchase a lantern suitable for giving exhibitions. The purchase would take place immediately, and be ready in the course of two or three weeks.



The report of the Committee on Lantern was accepted.

Mr. EHRMANN.—This book of Dr. Just's is written in a very scientific style. Lighting, the proportion of light required to obtain a picture, time of development, and everything else pertaining to photography, are treated in such a highly scientific style, that the ordinary photographic operator is hardly able to follow it.

With scientific men and members of amateur associations it might find favor; and it is the opinion of Dr. Vogel and Dr. Eder that it is too scientific to be of practical use.

Dr. Vogel, in criticising the pictures in this book, says that on all these developed emulsion papers they have not been able to produce pictures equal to our ordinary albumen prints. One picture was exposed 10 seconds to diffused daylight between 10 and 12 on April 23d, and developed in pure citrate of iron made neutral with ammonia. It took half a minute to develop the picture, which is not gilded. The next one was exposed six seconds and took five minutes to develop, and is not gilded. The next was developed in pure acetate of iron, in the proportion of 3 to 2, developed in six minutes, and not gilded.

Mr. GARDNER read the paper prepared by Mr. HORGAN, who was unable to be present, on "Photography for the Newspapers." [See page 40.]

Mr. EHRMANN said that in Mr. Horgan's paper, mention had been made that Gen. John C. Fremont had never had a picture made since he ran for President. He had made a picture of Gen. Fremont, his wife, and one of the officers of his staff, and would bring it to the meeting next month and show it.

Mr. MASON said he had made a 14 x 17 negative of Gen. Fremont as Major-General, which he would bring to the next meeting.

Mr. GARDNER thought that this subject of photography for the newspapers might be made a special subject with photographers, so that newspapers could obtain from photographers throughout the country, pictures of places of interest which would be likely to be of service to the press, for which sufficient remuneration would no doubt be paid.

Dr. LAUDY.—They are well paid to some extent. I was under the impression that the leading papers of the country had made arrangements with the local photographers. Some years ago an accident occurred on the Hudson river, above Peekskill, and I was instrumental in obtaining a negative of the scene, which I sent to one of the leading

papers, and I received the liberal amount of \$2.00 for the work.

Another objection I have heard made, is the processes used are of course mostly woodcuts, which so change the entire character of the original photograph, that an amateur would be ashamed to have it said that they were made from his negative.

Mr. EHRMANN—I think Prof. Laudy is perfectly right. We are far behind the Europeans in this line, if you look upon the beautiful productions by the Meisenbach process; though it is fair to suppose that in a short time we shall be able to show as good pictures, if not better.

[Mr. Kurtz has recently made in his gallery pictures similar to those made by the Meisenbach process, but he does not think they are good enough to send out of the gallery; but they are really excellent.]

The Meisenbach picture is an ordinary photographic negative, wherein the plate is made by breaking up the photographic half-tones in a peculiar manner. Unlike the Ives process, Meisenbach exposes his diapositive part of the time on a set of lines, and then interrupts the exposure and turns the lines around. I have seen very good pictures by the Meisenbach process in Boston, but they are no better than those we see in the *London Photographic News* and *Amateur Photographer*.

Mr. GARDNER.—Mr. Horgan's work is entirely for the newspapers, and he has charge of the illustrating of a great number of them. Many a time an editor is very much perplexed in having to get a picture of something which has happened during the day, and have it in the next morning's paper. They require methods of doing this work quickly.

Of course the pictures are not perfect in the manner they are now being done.

Mr. EHRMANN.—In the case of the Flood Rock explosion, which took place at about 11 in the morning, the negatives were developed, plain paper prints were made from them, line drawings were made, and the next morning fourteen pictures appeared in the *Sun* and *World*. Of course they were not good pictures.

Mr. MASON.—That reminds me of a little experience I met with on that occasion. I found that one or two very prominent papers had made their pictures before the explosion occurred.

I communicated with two or three editors, but I found the remuneration they would give was so small, I concluded it would not be worth while trying it. Another peculiar thing was

that there were so many photographers there, and only two papers mentioned the fact that there were photographers there who made good pictures of the event. They devoted a great deal of space to telling who was there and what such a man had, and only two mentioned photographers.

Mr. NEWTON—If there is nothing more to be said upon Mr. Horgan's paper, I would say that it is becoming quite popular to adopt pictures for educational purposes. There is something about a picture that attracts. We can always get this room full if we are going to show pictures, and a lecture upon any subject, no matter how distinguished the lecturer may be, fails to draw.

I would suggest that those who have the pictures of General Fremont and others, make transparencies of them and bring them to the next meeting, and we shall probably have our lantern by that time, and we can show you how it works; and if we can't show the pictures, we can show you the lantern.

Mr. EHLMANN then read a paper on "Elimination of Hyposulphite of Soda by the Salts of Lead." [See page 45.]

Mr. NEWTON—I will be expected to say something on this subject, as I was the one to introduce the use of lead salts for eliminating hyposulphite from silver prints. I introduced it without any partner. The extracts which Mr. Ehrmann has read from an article in a prominent journal have little or nothing to do with the subject. As I understand it, it is purely theoretical. Mr. Ehrmann does not inform us that he has made any experiments except dissolving the acetate of lead in water, and finding it was not a clear solution. I recommended the nitrate of lead or the acetate of lead; I should choose the nitrate of lead, as it is a permanent salt, and the acetate is not, but is continually changing from an acetate to a carbonate.

Prints upon plain paper were found to be permanent, but after the introduction of albumen it became apparent that for some reason the prints did not last. It was generally supposed to be in consequence of the presence of hyposulphite of soda. With time, observation and experience, it became apparent that it did not altogether depend on the presence or absence of hyposulphite of soda in the paper or print whether it was permanent or fugitive, whether it would last or be transient.

The old prints upon plain paper—there are some of them extant now that show no sign of decay or change. I have seen them after twenty years, and they were apparently as good

as when first made. In reference to its murky appearance, I called attention to the fact that even a solution of nitrate of lead will have that appearance, and it is soluble in acetic acid.

Never put a print in a solution of lead without making it perfectly clear and transparent.

I have claimed, and still claim, that lead salts used, as I have recommended them, will remove every trace of hypo from a print. It has been thoroughly tested, and the reports are extant and can be produced; also pictures from which the hypo was removed in that way. I waited until sufficient time had elapsed to show whether the prints were permanent, in consequence of the removing of the hypo by that particular process or any other process known. There are a great many prints now in the market that are not permanent. If you have one print in a clean solution of hyposulphite of soda, and remove from it all the hyposulphite of soda, that print will be as permanent as a silver print can be made on paper; but if that hypo is used again, the next print will not be as permanent as the first. It becomes impregnated with the dissolved chloride of silver, which is an element in the fixing bath which will render the picture fugitive, and there is no known process to prevent it.

I do not think these exhibits have a very close relation to the condition of the silver prints after the hypo has been removed. In order to produce these results, the solution must be in a wet state for the light to act upon it in conjunction with hyposulphite of soda.

Professor Parkhurst has experimented more than any one I know of in this vicinity, in the use of salts of lead in removing hypo from gelatine plates. He takes the plate out of the salt of lead and, without washing, sets it to dry. After standing two months in the light there was no change in it.

I have hundreds of prints from negatives that I have cleaned in this way and there is no perceptible change in them. I have here two prints which were given to me by Mr. Henry T. Anthony. After I introduced the use of the salts of lead, Anthony & Co. adopted this process for cleaning their prints from hypo, and used it as long as they continued that business. These prints were sent to Mr. Anthony by a photographer in Maine. One of them he had cleaned in the ordinary way, and the other he had cleaned with my process. They had been in the show-case exposed to the sunlight for a good while, and the whites in the one cleaned with my process are as good now as when it was made, more than fifteen years ago.



I invited Professor Parkhurst to be here tonight to give us some results of his experiments in removing hypo from the gelatine film.

I have found, when I have not time to wash the print, flow it over with a solution of lead. I generally flow it under the tap. If it is not thoroughly fixed, there is danger of its spoiling. After I found that by laying it in a tank of water for ten minutes would clean it more than washing it under the tap for the same time, I laid it in the water for ten or fifteen minutes while I made another negative, held it under the tap, and there was scarcely a trace of hypo in it. I have tried it in taking the negative out of the water and then putting the lead on, and have found no hypo. I would like to have you test this, because it is worth knowing, as there are many beautiful negatives spoiled by hypo. I make a ten-grain solution of nitrate of lead.

An acid developer is a very bad thing unless used very carefully. Mr. J. T. Taylor developed some pictures taken in Florida with a ferrous oxalate developer and lost every picture; when he used the soda developer he got very beautiful negatives.

Mr. EHRMANN—You mention about the washing of negatives. I think that plain water is, under all circumstances, better than any solution. Victor Schumann recommended, more than two years ago, washing the negatives with the film down; and Mr. Steward, of Glasgow, told me, last summer, that he had tried washing his negatives with the film side down with great success. After washing the negative about twenty minutes, it should stand a test of iodide of starch or mercury; and during the washing the negative is laid upon a couple of wires set in a certain way.

Meeting adjourned.

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### THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.

FIRST WINTER LANTERN EXHIBITION,  
1885-86.

ON the evening of December 9th, the first winter lantern exhibition, comprising mostly the work of members, was given at the society's rooms, 1260 Broadway, but on account of the inclement weather the attendance was not as great as is usual; nevertheless several ladies were present and enjoyed the entertainment.

Mr. Beach, assisted by Mr. George H. Ripley and Mr. C. W. Canfield, operated the lantern and announced the subjects as the pictures were thrown upon the screen. He had added

an improvement to the lantern in the shape of a five-inch single plano-convex condenser placed in close proximity to the rear of the six and one-half inch double condenser, so arranged that it could be readily adjusted, both in respect to the light and condensers. The additional brilliancy in the illumination of the pictures on the screen was quite marked, the disk being at least one-third lighter.

Mr. L. D. Mapes had some excellent slides of bathing and sailing scenes at Shelter Island; one or two pictures of sail-boats under full sail with a high wind, taken against the light, being quite good in effect and composition. Another of a porpoise partially out of the water was remarkable as illustrating what curious things the detective camera can catch. Still another was a view looking directly down from the top of the Coney Island iron tower. A picture of a landscape, including one or two stone fences and two dogs in the foreground, attracted attention on account of its clearness and the peculiar pleasant bluish tone it possessed.

The slide was too thin in the first instance, but had been slightly intensified with the Monckhoven bichloride and cyanide of silver intensifier, which gave it the agreeable tone mentioned without in any way blocking up the high lights.

A few instantaneous shots by Mr. Atkinson were interesting because of their sharpness and brilliancy. One, of a schooner sailing up the East River under full sail, was excellent; another, of a group of children, with their colored nurse, in Prospect Park was amusing.

A view from the N. Y. depot of the Brooklyn bridge, looking up the track towards the towers, showed excellent lines, being sharp in the foreground and distance.

Dr. P. H. Mason, of Peekskill, sent some very pretty chloride slides, warm in tone and beautifully clear in the high lights. Those that were particularly striking were Henry Ward Beecher's residence and entrance to his grounds, Peekskill; "The Coaching Party," a lot of raggedly dressed children with a goat harnessed to a small wagon in front of a dilapidated shanty, very nicely posed and arranged; "First view of Oscawana Lake," excellent distant effects; "A Tiny Mountain Stream;" "The Old Mill," an old water-wheel standing beside the ruined walls of the mill—very picturesque; and lastly, "On Peekskill Hollow Creek," the same view which took the diploma for class of "Rustic Bridge." The fine detail, perfect reflection of the mill in the distance, and foliage in the foreground, in the



water, were beautiful to look at, and elicited applause.

The slide was well made, all the beauty in the negative having been fully brought out.

A slide contributed by Mr. Francis Blake, entitled "Sheep Shearing," was novel, but was a trifle thin for the bright lime light.

Several instantaneous views by Mr. H. G. Cook were shown. A slide entitled "Decoration Day in New York" was extremely good of a military band at the head of a procession. The various attitudes of the players, and the crowd of people looking on, were quite life-like. The lighting was also soft and agreeable.

A number of slides contributed by Mr. R. A. C. Smith, of street scenes in Havana, Cuba, were excellent for detail and sharpness, as well as, in some respects, humorous.

The manner of yoking oxen was shown, and an ox-team in motion was particularly admired. Pictures of Havana natives, and of horses carrying fodder to market, were interesting, as depicting the life of that peculiar city. The Havana package express was amusing—a raggedly-dressed man carrying on a stick across his shoulders a miscellaneous cargo of bundles, tin pails, etc.

Several excellent pictures on the East River were shown.

A picture of Sidney Dillon's black poodle dogs, named Punch and Judy, was quite comical. All of the views were made with Anthony's detective camera. They showed good work, as every picture was sharp and clear.

The choice pictures of the evening were those of Mr. James Brush. "The Picaninies," "Niagara Falls in Winter," "Saco Valley, N. H.," "Views about Lake Mohouk, N. Y.," "The Delaware Water Gap," "Dog Sitting in a Willow Chair," beautifully clear and sharp, "After Supper," "The Berry Black Boy," and "Little Girl on a White Pony," all elicited applause, not only for their beauty, but the general uniformity of their tone and exquisite detail.

Views by Mr. A. D. Fisk, of General Grant's funeral procession, and his fine view of the Flood Rock explosion, as well as the same by Mr. William Chamberlain, were interesting historically.

Mr. Houston had a slide of General Grant's guard at Mount McGregor.

Mr. Beach exhibited slides of the Capitol at Hartford, Conn., much admired for its picturesque qualities, also views at West Point, N. Y., and of Mr. Brush in the act of taking his

noted picture of the white pony, showing how he did it.

The exhibition was brought to a close by the showing of a few slides made by Mr. G. H. Ripley from the negatives belonging to the International Photographic Exchange Club, made upon a new plate designed to be developed with dry pyro and carbonate of soda. Some of them were extremely picturesque, and the different tones which could be made by a long or short exposure was very plainly pointed out, and exhibited by duplicate slides made from the same negatives. At 10 P. M. the exhibition terminated.

#### SPECIAL MEETING, DEC. 22D, 1885.—*Cont'd.*

MR. ROOSEVELT—The gentleman who has just spoken has given us a theory that has not been advanced by any book within the last six months; that is the time my experience in photography covers. (Laughter). I mean in any book that has been published in the City of New York.

I have tested half a dozen different baths that I have kept over a day or two, but could not produce anything with them, and invariably had to throw them away.

MR. BEACH—Mr. Roosevelt, did you use ready sensitized paper?

MR. ROOSEVELT—I have used everything (Laughter).

So far as the toning is concerned, I read in ANTHONY'S BULLETIN, day after day, in answer to anxious inquirers, that the proper method of toning the paper was that contained in the directions sent with the package. What I was endeavoring to reach then was the dark photographic tone; I could get the reddish tone, but to get the black was absolutely impossible, and finally I was quite pleased to read in a later issue, of a month or so ago, that that method was all wrong (Laughter), and that the proper way was to first wash the prints in acetic acid, and that you would get a reddish tone, which was just what I did not want; but if you wanted to get the black tone you must not wash the print in anything but plain water. About that time, I met Mr. Gardner here one day, and he told me the only way to get a good picture was to sensitize your own paper. (Laughter.) I sensitized the paper, and then got prints for the first time that really looked anything like what I wanted. But I did not sensitize it as the gentleman has described here to-night.

The gentleman, in speaking of the trays, says that he uses a wooden tray. You won't

find anything in the books as to what material you should put the nitrate of silver in; and one day happening to see a beautiful shining tin tray I procured it, and poured what was left of my nitrate of silver into it. Instantly I got the blackest tone you ever saw. (Laughter.) Then as to washing the prints, another photographic gentleman advised me to use acetate of lead, and I tried it and had no more spots on the paper, although you will read in the scientific journals that acetate of lead is of no use. My experience before that with a number of prints was rather peculiar. After washing I found all of them covered with yellowish and reddish spots, so I went down to Anthony's one day and saw Mr. Roche of that firm; but Mr. Roche has hypo so strongly on his mind, that I believe when he comes to die his last words will be "hypo." (Laughter and applause.) I said, "Don't use the word 'hypo' to me—tell me anything but hypo." Notwithstanding that, he still whispered faintly at me "hypo." (Laughter and applause.) I found out afterwards that there was a little iron rust at the bottom of the bath, and if you have it in any of the trays that you wash your prints in, you will get plenty of beautiful spots.

Mr. SPAULDING—I wish to say one word more, and that is, there is nothing in the paper that I have read that is exactly new. The method that I have used was essentially the same as that used by the late Mr. William Klauser, who was well known to all here. Two or three years ago, I asked him, incidentally, to give me his formulas, and he kindly gave them to me, and I made a note of them with a pencil on a piece of paper, and I went home and tried them, and, as they worked so very well, I have tried nothing else since. So it is not my formula, it is simply Mr. Klauser's formula, who is now dead.

Mr. BEACH—Is there any other gentleman who has had this curious experience?

Mr. ROOSEVELT—Before I sit down I would like to say this in reference to sensitized paper, that they have made a great improvement in its quality and seem to have overcome the difficulty with it. I had been using for several months packages which contained a beautiful golden-yellow colored paper, and could never produce anything but yellow pictures, but lately I have had some that was inclosed between black paper that kept perfectly white and has given me some very nice pictures indeed.

Mr. BEACH—I would like to remark, before we go any further, that there is to be a photo-

graphic exhibition in Philadelphia next month, and if there are any gentlemen here who would like to send pictures, they should avail themselves of it without delay, as the time for sending pictures expires very shortly. You will see the notice near the bulletin.

On the subject of printing and toning, I have put a series of questions to a professional photographer in writing, for the purpose of gaining his experience, and he requests his name to be kept in abeyance in our reports. I think it would be instructive to take up each question by itself and then read his answer thereto, and let any one else who has experience on the subject give their experience. As there are a number of questions and answers, it will be impossible to go through with them all to-night, so that we will talk for half an hour or so and put it over for another meeting. The question I asked him first was:

Q.—In your estimation, what is the best method of preparing the nitrate bath for sensitizing paper? Also, what is the best strength for all ordinary work?

A.—For the most uniformity, certainty of success, simplest to keep in order and to give the best results for all classes of printing photographic positives, I hold in great estimation a plain and neutral bath. Make it 60 grains strong to the ounce of water—pure, clean nitrate of silver, and pure, clean water—soft preferred. Drop in a few drops of nitric acid, enough to slightly change blue litmus paper red; let stand a few hours; then add liquid ammonia, just enough to make reddened litmus paper blue; give it a good stirring or shaking and place in the sunlight a day or two, or longer if convenient and possible (a bath always works better by being prepared some time before use); then shake well and filter. If it should not immediately attach itself to the paper, weaken it to 50 or 55, but never use it lower than 50 in winter or 45 in summer. Test occasionally for acidity, then correct it, making it neutral. Filter each time after sensitizing. Keep the bottle well corked.

Mr. BEACH—I hope that our friend, Mr. Newton, will let us hear something from him in connection with the matter.

Mr. NEWTON—Mr. President: The bath constructed according to the formula that you have read, is very uncertain in its chemical constitution. It is an ammonia-nitrate bath. The old way—the first process of sensitizing the albumen paper—was by an ammonia-nitrate of silver bath. The silver was first dissolved in water, then ammonia was added, forming the black oxide of silver, until all the



silver was converted. Then the ammonia was continued to be added until that precipitate was dissolved, or until the black oxide of silver was dissolved. That was the old ammonia-nitrate bath, and it has made as good prints as have ever been made in any bath, but the difficulty of preparing it brought it into disfavor.

The gentleman who read the paper in reference to making a sensitizing bath, spoke so low when he came to that part, that I do not know what was the constitution of that bath, but I thought I caught the idea that nitrate of magnesia was used, and one other nitrate. As near as I could make out it was nitrate of ammonia.

Mr. BEACH—Nitrate of ammonia.

Now, about twenty years ago, I constructed a bath composed of 25 grains of nitrate of silver, 25 grains of nitrate of ammonia or potash, and 25 grains of nitrate of magnesia. It was not supposed at that time that a print could be made on a 25-grain silver bath. It was controverted and it was finally resolved that a committee be appointed to test the fact. Those who are familiar with the action of the different nitrates on albumen, know that most of the nitrates will coagulate albumen when in solution, but they do not know that there are only two of the nitrates, nitrate of silver and nitrate of ammonia, that will coagulate albumen and keep it on the paper. Nitrate of silver coagulates albumen instantly when it comes in contact with it, provided there is sufficient silver, but if the ratio of the nitrate is less than 20 grains to the ounce, the chances are that your albumen will be washed off before it is coagulated; but where you add nitrate of magnesia, or nitrate of ammonia, or nitrate of potash, any of those nitrates, they assist the coagulation of the albumen.

Now, when you construct a bath, by adding say 25 grains of nitrate of ammonia and 25 grains of silver, you get a coagulating force there equal to 50 grains of silver almost. When I constructed this bath—it must have been about 1865, according to my recollection—a committee went through that thing very carefully and scientifically, and every particle of silver that was used in the different baths was determined by the hydrometer and Pile's test tube. Now at that time 80 grains of silver was the usual strength of the silver bath. No professional photographer had used a bath less than 60 grains, and when I introduced this bath of 25 grains of silver, of course the photographic profession said at once that it would not work, and I said, "We won't theo-

rise on that question, because it is susceptible of demonstration," and as I said, a committee was appointed and went through the experiments very carefully, and any one who has *Seeley's Journal* or the *American Journal of Photography*, will find the report of that committee, which is very elaborate.

In my experiments after that, in making a bath that I considered would be the best for professional photographers, I constructed it with 40 grains of silver and 30 grains of nitrate of ammonia, with 3 minims of strong ammonia added, and I have given it to a great many professional photographers, and have never known any one to leave it for any other bath. You will find when you put in the ammonia you get a white precipitate, which is instantly dissolved. This precipitate is probably nitrate of ammonia. Fuming is not necessary for paper sensitized on this bath. You can fume part of it and leave some unfumed if you wish to see what the difference is, and see if your fumed paper is any better.

Mr. BEACH—I would like to ask you one question about the composition of that bath. Do you dissolve the nitrate of ammonia first in water and then the nitrate of silver?

Mr. NEWTON—I dissolve the nitrate of silver first because it is not quite so soluble as the nitrate of ammonia, though it don't make any particular difference. When you make your bath, use Croton water, and when all the ingredients are in put it in the sunlight and all the organic matter will be precipitated.

Mr. BEACH—Suppose you use distilled water; would there be any precipitate of any kind when you dissolve the nitrate of ammonia?

Mr. NEWTON—Not if your water is pure and your chemicals pure, otherwise there will be. It is difficult to get distilled water that is perfectly pure; if you take ice water it is much more satisfactory as a rule than distilled water which you get at the drug stores.

Mr. BEACH—My experience has been that where distilled water is used, there is a precipitate formed, and I could not clear the bath unless I put it in the sun.

Mr. NEWTON—It is a safe way to keep your bath in the sunlight.

Now one peculiarity of an acid bath, or a neutral bath, is that the solution turns brown and dark, or a reddish-brown color, by the action of the albumen which is dissolved. This bath, which I recommend, will never get dark, because the albumen that is dissolved off the paper is precipitated. You will always find some sediment in the bottom, and I al-



ways leave it there, but all the albumen that comes off is precipitated, so that your solution is always clear, especially if you keep it in the light. I always keep mine in the light and have used my bath for years without any change in the color of it.

Now in constructing the bath in the way I have described, there are one or two things you want to bear in mind. Recollect, 40 grains of silver and 30 grains of nitrate of ammonia to the ounce. You can use more nitrate of ammonia, but the office of the nitrate there is to coagulate the albumen. You will find that you will get a beautiful surface to your paper, and a very fine, beautiful print. In testing the strength of the bath by the hydrometer, you would suppose that adding 30 grains and 40 grains, the total would be 70 grains; but as the specific gravity of the nitrate of ammonia is much less than that of nitrate of silver, the hydrometer will only show 54 or 55 for the specific gravity of the solution.

Now in using that bath you are taking out all the time silver, but not the nitrate of ammonia, and after using, when you test it by the hydrometer, if you find that your bath is getting weak, you know just how much silver is gone, because all of your nitrate of ammonia is there, and the strength of the nitrate of ammonia will be in proportion to the evaporation, so that, in replenishing or strengthening your bath, you only want to add your nitrate of silver, making it up to 54, or the original strength, and if you want more volume add nitrate of ammonia to the water in the same ratio, and you will find that that makes as reliable a bath as any one can have to sensitize paper on. The tendency of this bath is constantly toward acidity, owing to the decomposition of the silver nitrate liberating nitric acid. Therefore it should be frequently tested and kept decidedly alkaline by the addition of ammonia.

Then I would advise you to use a porcelain or an agate dish, and be sure that one side is straight and smooth. Instead of using a glass rod, draw the paper over the side of the dish. Leave the paper on the bath about three minutes, especially in cold weather. If you prefer to fume it, don't fume it with full strength ammonia, but dilute the ammonia with one-half water.

Now when you raise the paper to take it off, let me advise you to raise one end and bring it against the end of the dish, making sure that this is clean. The atmospheric pressure will bring the paper in close contact with the

edge of the dish. Draw it up slowly; you will find that it will adhere closely, and take off every bit of the surplus liquid, so that there will be no drip; it will dry very quick and leave all the free nitrate of silver on that is necessary to make a good print. Paper taken off in that way will keep two or three days in cool weather, possibly a week, and will be white enough to make good prints on.

And now I have one word more as you have gotten me up here on the floor.

Mr. BEACH—Please confine yourself to the bath.

Mr. NEWTON—Yes, sir. I am going now to digress a little bit (Laughter)—unless I am sat on—on this salts of lead question. I introduced the salts of lead a great many years ago for clearing the prints of hypo, and it has been used very extensively in this country and in Europe.

Five years after its introduction, Anthony & Co. adopted its use, and they used four or five hundred sheets of paper a day. Any one who knows anything of the chemistry of the salts of lead, knows that lead will decompose hyposulphite of soda in solution the instant that it comes in contact with it. There is no such thing known in chemistry as hyposulphite of lead that I have heard talked about; chemistry don't know any such compound, but it does know of such a thing as hyposulphuric acid, but lead is not soluble in it, therefore you cannot make it. The hyposulphite of soda is instantly decomposed by the presence of a lead salt in solution. This thing was tested by a committee at Bellevue Hospital. The report of that committee shows that the prints were made cleaner with the salts of lead in five minutes than those which had been left in running water all night.

Mr. BEACH—Is there any precipitate formed when you put the prints from the hypo into the lead solution?

Mr. NEWTON—Always; that is when used with salts of lead. There is very little water so pure that there will not be a precipitate—that is, a cloudy appearance of the water. This is a carbonate of lead which is not soluble in water, and you will have a scum over your prints if used in that condition. Acetic acid will dissolve that and make your solution of lead perfectly clear. Add acetic acid until your water is perfectly clear, and then put your prints in, after the surface hypo has been washed off in two or three changes of water; then put your prints in the lead solution for five minutes, and you can't find a trace of hypo in those prints by

any process that I know anything about. Sulphate of lead, which is formed by the decomposition of hypo with a solution of soluble salts of lead, is one of the most stable salts known; it is not soluble even in nitric acid.

Mr. BEACH—Mr. Atkinson, are you willing to tell how you make your bath?

Mr. ATKINSON—It is so late now. I think we had better defer it until some other evening.

Mr. BEACH—Mr. Ripley will now show us a new construction in the camera.

Mr. RIPLEY—I have the pleasure of calling your attention to a camera just made for me by Mr. Gregg, who has devoted considerable time and attention to its construction. It possesses all the desirable movements combined so as to retain the essentials of compactness, rigidity and lightness, together with great facility in handling. The tripod, as you will see, is in three parts,  $23\frac{1}{2}$  inches long when folded, and has the benefit of triangulation at the head, without which no tripod can be firm. The lower joint is used to regulate it for different heights and for uneven ground. One of the prettiest features of the whole camera is the tripod head, being in the form of a turntable in the bed of the camera, thus obviating any trouble about a loose tripod head. As you will observe, the approximate adjustment for focus is performed in the act of setting up. The fine adjustment is with rack and pinion. The extension is all within the camera, and with it a range of from  $2\frac{1}{2}$  to 22 inches can be obtained. The camera, when closed, is  $10\frac{1}{4}$  inches square and  $2\frac{1}{4}$  inches thick. A movable panel protects the ground glass.

Mr. BEACH—What is the weight of it?

Mr. RIPLEY—I cannot give you the weight; it is very light.

Mr. BEACH—What is the size?

Mr. RIPLEY—It is  $6\frac{1}{2} \times 8\frac{1}{2}$ .

Mr. BEACH—Is the back made reversible?

Mr. RIPLEY—The back is made reversible.

Mr. BEACH—We would like to see how it reverses.

Mr. RIPLEY—The whole back comes off and is replaced, reversed, as usual. I have not practiced with it to see how quickly I can set up the camera and take a picture, but I imagine there is no camera which can be taken down and set up as quickly as this, and when it is in the hand it is very pretty to look at and very convenient to carry.

Mr. BEACH—Where do you carry the lens—in a separate place?

Mr. RIPLEY—Yes; you will have to carry it

separately. I carry my lens in a fishing-reel case, and if I am on a tramp I strap it around my waist. I have a case for my camera; that is, it has been ordered. It looks like an ordinary coat case and will contain camera, tripod, plate holders, shutters, lenses, etc. The tripod, while folding so compactly, is rigid enough when set up to carry a  $11 \times 14$  camera.

Mr. BEACH—Is there any particular name for the camera?

Mr. RIPLEY—I do not know that Mr. Gregg has given it any name. He has been so pleased with the result of our joint labors, and his customers are so well pleased with it, that he is overwhelmed with orders already, and he will make them for sale.

Mr. BEACH—Is it be called the Ripley camera?

Mr. RIPLEY—No, not at all, because I have no desire for notoriety in the matter, and because it is only original as a whole in the sense of a combination of desirable features suggested by my personal experience.

Mr. BEACH—Is there anything new about the plate holder which goes with it?

Mr. RIPLEY—No; I use the Daisy holders made by the Scovill Manufacturing Company, but most any plate holder can be fitted to it.

A motion was then made to adjourn, which was carried.

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[From Photographische Correspondenz.]

## MY EXPERIENCE WITH ORTHOCHROMATIC PLATES.

BY CH. SCOLIK.

SINCE the emulsion process has taken root, no improvement has awakened such a lively, steadily increasing interest as photography of colored objects in their correct tone proportions; a process which makes it possible to reproduce the warmer color-tones, particularly yellow, orange-red, and yellow-green in their correct light value as they appear to the eye.

In professional circles, as also among the public, the value of this invention cannot possibly be under-estimated; an invention with which a new epoch in photography may begin, and by which the handsomest results, particularly in reproductions of oil paintings, can be attained. But in portraiture, as well as in landscape photography, recourse must also be had to orthochromatic plates to obtain effective pictures, particularly as plates can now be produced in which the relative sensitiveness closely resembles that of the ordinary emulsion plate. Although a good deal has been written about this subject, none of these

sometimes excellent treatises contain a complete and generally comprehensive formula for the production of color-sensitive plates, and this circumstance causes me to publish my own experiences.

The following coloring matters are particularly recommended in the several publications as preferable:

Eosine yellow and eosine blue shade, iodine cyanin, erythrosine, methyl violet, aniline violet, iodine green, azalein, Hoffmann's violet, acid green, methyl green, rose bengal, pyrosine, chlorophyl, saffrosine, coralline, saffranine, etc.

Particularly important is the correct concentration. The most excellent color matters make the plates oftentimes quite useless by an incorrect proportion of concentration. If this should be too strong, the total sensitiveness will sink (decrease); but when too weak, the color sensitiveness is much reduced.

This fault, particularly, cannot be corrected during washing, but I have mentioned, at the end, how such over-colored emulsion can be made of use before wetting (flowing).

By the addition of some coloring matter to the emulsion, the light sensitiveness of the film towards some individual colored rays is increased, but the sensitiveness for the stronger refractive rays is, as a rule, generally reduced. The result is a loss of the total sensitiveness for white light. Color-sensitive plates are therefore less sensitive to light than ordinary plates of the same origin.

The action of the coloring matter depends also very essentially upon the emulsion. If the emulsion contains iodide of silver, it has a greater sensitiveness for light blue and blue-green light. At all events, the iodide combination must not amount to more than one or two per cent., a small quantity of iodine acting much better upon the total sensitiveness of the plates than can be obtained by pure bromide of silver emulsion.

Methyl violet, rose bengal, and azalein act perceptibly in  $\frac{1}{10000}$  per cent. upon yellow sensitiveness. Eosine and its varieties, eosine yellow shade, or eosine J, pyrosine J, erythrosine yellowish, may all be noted as very good sensitizers for green, yellow-green, and eventually for yellow. The bluish shades of eosine colors, on the contrary, have an absorption band further in the yellow. This is also the case with the blue shade eosine (eosine B), and the most bluish of all eosines, the bengal rosa. Of both eosines yellow shade and blue shade, the latter gives a little more intensity.

Although the eosine permits a large limit in

the quantity, it will reduce the sensitiveness greatly in larger quantity.

If eosine solution is mixed with bromide of silver emulsion, which is entirely free from nitrate of silver, no eosine silver can form; it acts, therefore, only as an optical sensitizer.

Of the several kinds of cyanin, chlorosulphate, nitrate and iodide, the latter acts best, as stated by Eder.

Schumann has already said that one drop of cyanin solution 1 to 2,500, to  $6\frac{1}{2}$  c.c. emulsion, already acted as sensitizing in orange; five to ten drops cyanin, 1 to 1,500, to 15 c.c. emulsion, even gave red action.

There are two ways to color the gelatine film with a suitable coloring matter: by mixing the latter directly before filtering into the ready-made emulsion, to produce at once colored plates; or to bathe dry emulsion plates for one to five minutes in a solution containing the sensitizing coloring matter. The plates have previously to be soaked for a few minutes, whereupon they are bathed in an aqueous alcoholic solution (with eosine yellow shade and eosine blue shade, in a solution of 1 to 3,000; but with cyanin in a diluted solution of 1 to 5,000.) A mixture of  $\frac{1}{10}$  cyanin and  $\frac{9}{10}$  eosine yellow shade (of above concentration) acts as a very favorable sensitizer. Lohse recommended bathing of the gelatine plates in a solution of 0.03 eosine and 10 c.c. ammonia in 100 parts of water. He found that very diluted eosine solutions, 1 to 20,000, acted as a yellow sensitizer.

After washing, the plates have to be rinsed and dried. Colored plates, as long as they remain moist, being less sensitive than dry ones, and very seldom the reverse.

This bathing of the ready-made plates may give good results, but pure and faultless plates are very seldom obtained, wherefore the first-mentioned manner (direct addition of color to the emulsion) is to be preferred.

After the experiments made by me, eosine mixtures acted equally in the yellow and blue shade; likewise mixtures of cyanin  $\frac{1}{10}$  and eosine yellow shade  $\frac{9}{10}$  was the most favorable. The process with eosine underwent first of all a thorough test, of which the following are the results.

The color solution I made as follows:

I. 0.5 grm. eosine yellow shade in 750 c.c. alcohol (95 per cent.) is dissolved under good shaking.

II. 0.5 grm. eosine blue shade is also dissolved in 750 c.c. alcohol.

(The emulsion preparation I do not repeat,



supposing that everybody is conversant with the same.)

To an emulsion after Monckhoven's method, I add, before filtering, above eosine solutions to 1,000 c.c. emulsion, 15 c.c. each of yellow shade and 15 c.c. of blue shade eosine; mix with a glass stirring-rod, filter, and begin the flowing of the plates. On the contrary, to an emulsion made after Henderson's method, double the quantity of coloring matter can be added before flowing, without reducing the sensitiveness perceptibly.

Cyanin and eosine mixtures I give in the following proportions;

III. 0.5 grm. cyanin (iodo-cyanin) dissolved in 1,000 c.c. alcohol under good shaking.

(All coloring matter solutions have to be filtered.)

To 1,000 c.c. Monckhoven emulsion I give:

25 c.c. eosine solution, yellow shade (I).

5 c.c. cyanine solution (III).

With Henderson emulsion I increase to double the quantity.

Further experiments taught me, that even if 60 to 80 c.c., and more, of these coloring matter solutions were added, and the emulsion was left to coagulate and then laid in alcohol for several days, after which it was washed well, so that hardly any coloration could be observed; it showed, when making a copy of an oil painting, that the color sensitiveness of the emulsion was not reduced, and that it had rather increased in relative sensitiveness.

Anyhow I put every colored emulsion for eight days in alcohol, having experienced that hereby, after washing, just a sufficient quantity of the coloring matter will remain as is necessary for the color sensitiveness.

For the correctness of what I have said here, the following experiment made by me will speak:

I mixed with an emulsion a quantity of coloring matter five times increased, flowed a plate with same, which I then exposed, but obtained no picture whatever.

The same emulsion I placed for fourteen days in alcohol, washed it well and flowed a plate again, which latter had not only the full-color sensitiveness, but almost equaled an ordinary emulsion plate in total sensitiveness.

From this can be concluded that—as above said—by placing the emulsion in alcohol, all superfluous coloring matter is removed from the same, and that only the quantity necessary for the color sensitiveness remains therein.

Further, it may be mentioned that it might be of advantage to add to all emulsions

eosine besides iodide of silver, because this will give to the emulsion clearness and brilliancy besides color sensitiveness, and produce fine lights.

Finally, I express the hope that these communications may be useful to the practical photographer; and it is my intention to report also about other coloring matters at some future time.

*Translated by H. D.*

*[From the Hartford Courant.]*

## **SOME BEAUTIFUL VIEWS.**

THE Camera Club has received from Mr. W. B. Tyler, President of the San Francisco Photographers' Club, fifty views taken by himself and Mr. Lowden, of San Francisco Bay, the mountains and a number of interiors. These views Mr. Tyler wishes to exchange for views taken by the Camera Club, each member to take the views he or she wants and send on others taken by the Camera Club. The only trouble about this is the various members of the Camera Club are liable to want individually nearly all the San Francisco views. This desire is not unnatural, for while the views are no better done than some made by our own club, the subjects have been selected by a man with an artist's eye and an experience of five years. Mr. Tyler crosses daily from San Francisco to Oakland, and evidently carries under his arm a detective camera, and is ready to catch any marine picture that may be presented. The collection contains a preponderance of marine views—vessels under full sail, Italian fishing boats, yachts, full-rigged ships, and the entire list which go to make maritime miscellany. These views are many of them evidently taken from the deck of a vessel in motion, and the artist has caught the heeling vessels, the broken water they make, and the light and shade on their sails. The interior of land views are mostly taken by Mr. Lowden, and are some of them wonderfully effective—one in particular, where a string of oxen is coming down a rough mountain road and the dust covers half of the toiling beasts and the logs they are drawing.

The privilege of exchange of views is limited to members of the club. The San Francisco photographer is a man of means who has taken up photography for pleasure, and while he is willing to exchange and thus add to his collection, he does not go into this as a commercial matter, and would doubtless refuse to allow his plates to be used by professionals.

## What Our Friends Would Like to Know.

*N.B.—We cannot undertake to answer communications of a technical character except through the columns of the BULLETIN. Correspondents will please remember.*

Q.—B. C. writes:—I am troubled with my photos turning yellow in the whites after a year's existence. I wash them through a sugar of lead solution cleared with acetic acid.

*First.*—Will much acid keep the lead from having its desired effect, and cause the prints to turn yellow in time?

*Second.*—Can one use the lead too strong; if so, what effect will it have on the prints?

*Third.*—How much washing does it require to remove the lead from prints?

A.—We believe that yellow prints are due more to over-used fixing baths than to simple hyposulphite alone. The double salt of silver and hyposulphite should be thoroughly eliminated from the prints, and to do this effectually, the fixing bath should not be used too long. It would be best to fix in two hypo baths; taking the bulk of the silver out in the first one and then finishing in the second. After a time the first bath can be precipitated and the second one used in its place, a new bath being made to finish in. By this procedure, and a final thorough washing, we believe the prints will not turn yellow. In regard to the use of lead salts, we would refer our correspondent to the article upon the subject by C. Ehrmann in this issue of the BULLETIN, and also in the discussion in the report of the Photographic Section of the American Institute. We have seen the lead salts used with considerable success, and do not think a moderate excess of acetic acid has any important effect. In the matter of washing it should be well done, but need not be as excessive as without the use of lead salts.

Q.—T. C. M. writes:—Will you please inform me through the BULLETIN whether the smooth side of the ground glass should be placed toward the lens, or *vice versa*? I find that there is quite a difference of focus in each case. Which is the correct position?

Also the means of obtaining a uniform circle of light with Anthony's enlarging camera. In every case I find the image of the lamp appearing on the screen.

A.—The rough or ground side of the ground glass should face towards the lens. In regard to the image of lamp in the enlarging camera,

by putting the lamp a little farther back or forward, the image will disappear.

Q.—C. A. S. writes:—Will you kindly answer the following in your journal: In the December (1884) BULLETIN, Mr. Cooper says, in very short drop shutter exposures, to get the best results, soak the plate in a ten-grain solution of carbonate of soda, and give a prolonged wash under the tap. Will you kindly inform me how long the plate should be soaked, and how long a washing it should have to insure the best results?

A.—Soak for about two minutes in the soda solution, and wash under the tap for about five minutes.

Q.—J. S. A. sends a yellow spotted print, and says:—It may possibly be the hypo, but I was careful to wash thoroughly. Can it be anything else?

A.—It is probably hypo stain, and may be due to one of two causes. Either your hypo was used too long, or it had become acid from some cause.

Q.—Z. B. incloses a piece of paper, and writes:—Please give me your views on the inclosed piece of paper, silvered on a sixty-grain bath, fumed twenty minutes, dried spontaneously, and all I have used of this brand comes up in this way, all spotted on the back?

A.—It is almost impossible to say just what is the cause of the spots on this paper; but they are probably due to pyro dust. This substance is so light, that the least breath of air in a room where a bottle is being emptied or filled will carry myriads of particles into the atmosphere, and they settle on everything.

Q.—C. A. R. G. writes:—Will ordinary spring or well water do for mixing gold solution?

A.—If the water is hard it will not do. It is always best to use distilled water if you can obtain it, and the next best thing is clean, well-filtered rain water.

Q.—C. S. B. writes:—There is a formula for developing dry plates given in the issue of the BULLETIN for December 12th, from the *Photo News*, written by Dr. J. M. Eder. Now, I would like to try that formula, but can't measure the chemicals. Would you be so kind as to have it put in the BULLETIN in ounces and drams, so we can understand it.

A.—1500 c.c	= 51 fluid ounces.
100 grams	= 3½ ounces (437 grains).
15 "	= 231 grains.
500 c.c	= 17 fluid ounces.
50 grams	= 1¾ ounces (437 grains).
2½ c.c	= ¾ of a fluid dram.

These equivalents are not exact, but are close enough to make up the formula.

## Views Caught with the Drop Shutter.

It may be said that the establishment of MULLETT BROTHERS is a credit to Kansas City, and the statement that they carry the largest, most varied and complete stock of amateur photographic outfits, photographers' supplies, picture frames, albums, moldings and artists' materials, will be corroborated by their myriad customers.—*Kansas City Commercial*.

MR. G. CRAMER, of St. Louis, will soon complete his extensive dry plate factory, the building of which became necessary from the large demand for his plates. Wishing to place some objects of interest in the foundation-stone, he has sent for a copy of the last BULLETIN as one of these. We readily supplied him with a copy, and fully appreciate the compliment conferred upon us in the request.

The partnership of DOUGLASS, THOMPSON & Co., of Chicago, expired January 1st by limitation.

MR. FRANCIS HENDRICKS, of Syracuse, N. Y., announces that he has admitted Messrs. Irving A. Savage, Earl Thompson and Fred E. Colwell as partners in his business, under the firm name of Francis Hendricks & Co. Mr. Colwell will continue to be traveling salesman.

FITZ GUERIN, of St. Louis, will soon furnish us with an illustration for the BULLETIN.

D. K. CADY, Secretary of the Photographic Merchants' Board of Trade, sends out a call for the annual meeting, to be held Tuesday, February 9th, at the Metropolitan Hotel, New York. Meeting called at 10 A.M.

P. L. DECKER, Newburgh, N. Y., has sold his studio to Mr. T. E. Wood, formerly of the Star Dry Plate Company.

J. H. NEW's gallery, Cohoes, N. Y., burned out. Loss, \$5,000; insured, \$3,500. He will rebuild on the old site.

THE photograph gallery of Adam Heeb, in Milwaukee, Wis., was burned January 11th. The loss on the stock and building is \$9,000; fully insured.

E. K. HOUGH is now located in North Carolina, where he reports fine weather and good work.

POSTMASTER PEARSON has been notified by the Post-office Department that photographs (on paper) and "blue prints," heretofore rated as fourth-class mail matter, are now held to belong in the third class, and that the rate of postage payable thereon is 1 cent for each two ounces or fraction thereof, instead of 1 cent an ounce as formerly.

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INTERNATIONAL REGATTA  
BETWEEN PURITAN AND GENESTA

—FOR—

AMERICA'S CUP.

SEPTEMBER 16th, 1883,



NEGATIVES ON THE STANLEY DRY PLATE

PRINTED BY O'NEIL, ON THE  
N. P. A. PENSE ALBUMEN PAPER.

PHOTOGRAPHED BY  
MR. HENRY J. NEWTON.

# ANTHONY'S Photographic Bulletin.

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Prof. **CHARLES F. CHANDLER**, Ph.D., LL.D., *Editor*.

**ARTHUR H. ELLIOTT**, Ph.D., F.C.S., *Associate Editor*.

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FEBRUARY 13, 1886.

Vol. XVII.—No. 3.

## DARK ROOM DANGERS.

Much has been written from time to time about the poisonous effects of various chemicals used in photographic manipulation. Lately considerable discussion has occupied the attention of some of our photographic societies upon the question of the Bichromate Disease and its results. But there is a far more insidious way of undermining the health and poisoning the human frame, and one to which all photographers, both amateur and professional, are continually exposed—we mean the ill effects that result from bad ventilation in the dark room. Some time ago we visited the studio of a professional photographer and were much pleased with the disposition of the various pieces of apparatus and accessories. Everything was in its place and there was a place for everything. An effort had been made to arrange all the various parts of the operating room to facilitate work, and produce pictures rapidly with the least expenditure of time and the minimum of danger to the results. One of the neatest contrivances that we noted was a couple of closets with sliding shutters just large enough to hold a plate holder, and attached to the side of the dark room. Into one of these closets the operator in the dark room placed a plate holder with an unexposed plate in it and closed the shutter on the inside; the operator outside opened the exterior shutter, took out the plate holder, made the exposure, and then placed it in the other closet that we have mentioned. By this arrangement it can readily be seen that a large number of plates can be placed in holders, exposed, and returned to the dark room without the danger of exposing the plates to white light, or admitting light to the dark room by opening the door during development.

Now while the above arrangement is exceedingly convenient, and admits of rapid work, we failed to see any provision made for the ventilation of the dark room; and the effect of breathing air over and over again must surely tell upon the health of the individual who has to stay there. For when a photographer is busy, the development of plates goes on hour after hour without intermission.

From observations made in a number of cases, we are satisfied that this lack of ventilation is not uncommon, and the effects usually attributed to the use of the ruby light may often be traced to bad ventilation and the effects of breathing the same air over and over again. While the effect of breathing the same air too often leads to headache and nausea, the loading of the air with emanations from the lungs aggravates these evils, and produces diseases of the throat and soreness of the eyes—the latter too often attributed to the use of ruby light.



If artificial illumination is used (gas or oil), it increases the danger, unless special provision is made, when it can be used to facilitate ventilation.

In the case of amateur photographers the conditions are often still more aggravated. Forced by circumstances to seek some out of the way place, some closet in a dark corner of the house, the enthusiastic amateur stuffs himself into a very small compass, and fusses for hours over a set of views that he has probably traveled many miles and spent much valuable time to obtain.

It is an old saying, but nevertheless true, "An ounce of prevention is worth a ton of cure," and we have discussed this matter of ventilating the dark room because we are satisfied that it is the cause of much sickness and ill-health among photographers, both professional and amateur, and we will now call their attention to a few figures that should guide them in seeking to mitigate the evils we have called their attention to.

After a great deal of study, sanitary authorities have come to the conclusion that an adult needs 3,000 cubic feet of fresh air per hour. From the lungs of such an adult there is exhaled six to seven-tenths of a cubic foot of carbonic acid gas per hour, and the air that carries it is saturated with moisture. To admit of proper ventilation, each person occupying a room should be allowed 600 to 1,000 cubic feet of space.

Another source of contamination to the air should also be considered, that is, artificial illumination. An ordinary gas flame burning five cubic feet of gas per hour, gives about four and a half cubic feet of carbonic acid gas, or nearly one and two-thirds times as much as a man exhales per hour. Kerosene oil causes about the same vitiation of the atmosphere, with the additional disadvantage that the unburned vapors of the oil add considerably to the ill effects of the air upon the eyes and throat.

Some idea of the quantity of air necessary to change the atmosphere of a room with 600 cubic feet of air space, and produce good ventilation, may be obtained when we state that a current to remove this air entirely six times in an hour, will not create a draught noticeable to the occupant. The openings for ventilation should be about 20 square inches for inlet and the same for outlet for each occupant. It is obvious that this area of inlet and outlet can be distributed into a number of openings, and generally this will be the better plan, as such a distribution of the air currents will prevent the possibility of draughts.

Where artificial illumination is used, the heat produced from either gas or kerosene can be utilized to produce a current in a shaft leading out of doors, and thus assist the ventilation of the dark room.

From what we have said some of our readers will, perhaps, give a little more attention to a source of many of the ills they complain of, in the shape of nausea, headache, nervousness, and a host of other ills that make life a burden, and whose origin is the breathing of used-up air.

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THE BULLETIN is a welcome visitor, and looked for with eagerness, I find a great many people not connected with photography that visit me, are pleased with it, and read it.

G. ROBINSON.

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GLAD to see you are keeping up with the times. I would not be without it, as it has become a household necessity.

G. A. ADDISON.

## EDITORIAL NOTES.

THE Philadelphia Exhibition was a great success, and surprised everybody who saw it. The Executive Committee is to be congratulated upon their good management.

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MR. CARBUTT should be very much pleased with the results of the above Exhibition, from the number of pictures that were taken upon his plates.

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MR. H. H. SNELLING, of Cornwall, sends us some exceedingly interesting prints made by pigment-printing in raw sepia and red-lead, and writes:

"I thought I would send you a couple of specimens of pigment prints made with collodion negatives in August, 1858, by a process of my own invention, similar to Mr. Sherman's. I have printed on prepared canvas, textile fabrics, cardboard, and wood by the same process; yes, and on glass, and burnt it in."

We are very much pleased to get the specimens from Mr. Snelling. They are reproductions of wood engravings of Dalziel Brothers, and are very interesting pieces of work. Mr. Sherman's process was noted in the last BULLETIN in our Editorial Notes.

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MR. G. M. CARLISLE, the Treasurer of the Photographers' Association of America, gave us a call just as the BULLETIN had gone to press for the last issue. He had returned from the meeting of the Executive Committee in St. Louis, and gave us the following items in connection with the coming Convention.

The Committee have secured the ground floor room in the Exposition Building, containing 20,000 square feet, for the use of stock dealers. They have secured the entire front second floor, Olive street side, for the art exhibit, and it is in the same condition for art purposes as it has been since the building was erected.

They are to distribute ten gold medals of equal value, \$100 each.—Two for foreign exhibits, one for the best specimen of portrait photography, and the other for the best exhibit of photographs other than portraits, which embraces landscapes, architecture, interiors or animals.

They reserve eight gold medals for the best exhibits of the United States and Canada. There are to be also distributed ten silver medals for the ten next best exhibits.

They have also established a basis upon which the photographs are to be judged, and have subdivided them into the following four divisions:

*First*.—Light and shade.

*Second*.—Position.

*Third*.—Composition.

*Fourth*.—Chemical effect.

The highest possible points to be reached in either of the subdivided conditions are ten. The highest number of points possible are forty, ten in each subdivision.

In addition to these medals there are to be two medals of merit.

Mr. Joshua Smith, of Chicago, has been appointed a committee to secure subscriptions for the same.

The Committee were extremely fortunate in making arrangements for the hall at \$600, with everything in readiness for the exhibition.

See official report elsewhere in BULLETIN.

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IN Mr. R. BENECKE's report of the *St. Louis Photographic Association*, published in the last BULLETIN, our attention has been called to an error, which we must correct. On the last line of page 46 the report *should read*: "A motion made by one of the members was carried unanimously: That we, the St. Louis photographers, resolve *not* to compete for any of the prizes offered at the Convention, etc." In the hurry of going to press we did not note that the types had fallen out.

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WE are indebted to Mr. G. CRAMER for a very handsome 12 x 12 group of the Executive Committee of the P. A. of A. We hear that at the recent meeting in St. Louis they had a very happy time, and this picture must have been taken very soon after, for the faces reflect a particularly happy expression. The group consists of *President* POTTER, *Treasurer* CARLISLE, *Secretary* McMICHAEL, G. CRAMER, R. BENECKE, and D. R. CLARKE, and a more intelligent group of faces we have not seen for many a day, while the posing is particularly good and brings out the handsome features in each face.

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FROM some recent experiments made by Messrs. Wahl and Ward, of the Franklin Institute, Philadelphia, we learn that compressed magnesia gives almost double the amount of light that is obtained from lime, when heated in the oxy-hydrogen flame. The gases used were the well-known mixture of hydrogen and carbonic oxide, called water gas, and oxygen. The consumption of water gas per hour was 2.52 cubic feet with 0.90 cubic feet of oxygen. The light obtained with the lime cylinder was 121.72 candle power, while the magnesia cylinder gave 210.63 candle power; which is 86.3 per cent. in favor of magnesia. If these magnesia cylinders can be made economically, they will be very useful in the magic lantern as a source of light.

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THE Argentic Positive Plates which we mentioned in a recent number of the BULLETIN, appear to be awaking quite an interest, judging from the number of inquiries we have received about the mode of working and the results obtained.

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WE have received from the manufacturers of the Argentic Positive Plates a correction of the proportions of the stock solutions to be used in developing. Use 4 drams of No. 1 instead of 2 drams. We gave the formula as it was given to us, and the mistake was not ours, but our informant's.

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THE sensitiveness of photographic plates is such, that photographs of the fire on Arch street were successfully taken by Mr. Arthur G. Massey during the night, when the only illuminant was the light of the fire itself. That they were taken almost instantaneously may be judged from the fact that the figures of firemen stand out clear and distinct against the flames. The pictures, however, are like silhouettes, the ruins of the buildings appearing as black masses against the white of the flames; but there are some indications of half-tones from reflected



light, and one of the pictures dimly shows the south side of Arch street wholly lighted by reflection.—*Philadelphia Ledger*.

THE London Stereoscopic Company's Second Annual International Amateur Exhibition will be held from April 15 to May 24, 1886.

WE have just seen a very large detective camera made by our publishers, which takes 8 x 10 plates. It is beautifully finished, and could be used in two positions, having finders on both sides and screw plates for use with a tripod if necessary. All the usual attachments were applied in its construction, making it very complete.

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#### OUR ILLUSTRATION.

MR. NEWTON has kindly given us the following notes upon his expedition during the International Boat Race, a series of pictures of which, from Mr. Newton's negatives, we present to our readers in this issue of the BULLETIN. Mr. Newton says: "We were on the *Sun* dispatch boat, and made directly for the light-ship off Sandy Hook, the starting point. No. 1 picture was the first taken, and is a picture of the Genesta going off at the east of the light-ship to get in position to pass the line between the judges' boat and the light-ship. No. 2 was the next picture taken, showing the light-ship and the judges' boat, and the Genesta going around the judges' boat. No. 6 was the third picture taken, which represents the Genesta passing the line between the judges' boat and the light-ship, one minute ahead of the Puritan. No. 5 was the next picture taken, and represents the Puritan following the Genesta. No. 3 represents the Puritan in the foreground somewhat in advance and ahead of the Genesta, which time had occupied twenty or twenty-five minutes in getting that much ahead, and making up behind from the start. No. 4 represents the Genesta in the distance, and the Puritan in the foreground, the Genesta at this time being ahead, it being very soon before rounding the stake at the end of the race, twenty miles out. The Puritan had taken in some of her sails, and at this time was under four sails, the Genesta carrying six. Immediately after this picture was taken the Puritan lowered her topsail, carrying only three, while the Genesta carried six. The Genesta rounded the stake two minutes in advance of the Puritan. After the Puritan rounded the stake she then again hoisted her sails and soon overtook the Genesta and passed her to the right, and stood off toward Coney Island. I had reserved two plates to expose at the finish, but the Puritan, after running down ten miles or more toward Coney Island, crossed our bows—the dispatch boat's—and left us after she took that tack. In fifteen minutes she was a mile away from us and ran down to the Genesta and the light-ship, and crossed the line two minutes ahead of the Genesta, leaving us between two and three miles behind, so that my two reserve plates still remained unexposed."

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I AM glad to see you are going to make a still farther improvement in the Journal. I like it very much, and it is just what an amateur needs.

G. HENRY SHEAUR.

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THE BULLETIN seems to grow in interest with every number.

J. READMAN.

### ALBUMEN PAPER.

DURING this cold weather too much care cannot be taken about the temperature of the albumen paper, and the sensitizing and fixing baths in which it is used. Remember that the paper and the solutions should be at 60° to 70° Fahrenheit. Mealy prints often come from the paper being cold and the solutions warm, or *vice versa*. There is also a danger of the albumen softening and coming off the paper.

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### A CORRECTION.

WE are indebted to Mr. FULLER, of the *Photographic Times*, for a correction in Mr. Ehrmann's paper on "Elimination of Hyposulphite of Soda by the Salts of Lead." In the fourth line from the end of the paper, read No. 6, instead of No. 7. This reached us too late for correction in last BULLETIN.

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### THE PHILADELPHIA EXHIBITION.

THE Exhibition which has just been held by the Photographic Society of Philadelphia was a notable one in many respects, and undoubtedly the largest and finest of its kind yet held in this country. The society, though chiefly composed of amateurs, has a large number of prominent professional photographers on its roll, and in framing its rules for the exhibition could hardly do otherwise than invite competition from among the ranks of both classes. Professionals were invited to compete in all the classes of work, except a few which were reserved for amateurs exclusively, while, in compensation for this, certain classes were reserved for professionals alone. Professional portrait work was not admitted, as it was desired especially to illustrate to the public what could be done in the other branches of the art. In this the society was eminently successful, as they showed a collection of 1,752 pictures from 114 exhibitors, occupying the walls of three of the largest rooms in the Pennsylvania Academy of the Fine Arts. The society were fortunate in securing rooms so desirable for exhibition purposes, and received numerous compliments on the admirable manner in which they had been able to arrange and hang the pictures, so that all had justice done them in this respect. The largest room in the building, about eighty feet long and fifty feet wide (with the exception of one section of the western wall), was entirely occupied by the work of the society, all of which was framed. Forty-five members of the society were thus represented, and the appropriate and tasteful framing, together with the beauty of the room itself, made this portion of the exhibition extremely attractive. In the second gallery, a room about half the size of the one just described, the work of foreign exhibitors and those entered in the ladies' classes were hung, and in a third room the remainder of the exhibits from different parts of the country were placed. Many of these pictures were tastefully framed, so that this room also had an attractive appearance.

The transparency stand was placed here, and though the only light available was from the top, the pictures were so arranged that all could be seen to perfection. They were hung facing each other on two sides of a square frame-work; in the center of this frame muslin reflectors were arranged so as to reflect the light, which came from above in a horizontal direction through the transparencies.

The exhibition began on Monday morning, January 11th, and continued

open to the public, day and evening, throughout the week. On Thursday evening the competing lantern slides were exhibited in the Lecture-room of the Academy to an audience that filled the room to overflowing.

The Board of Judges consisted of Mr. George W. Hewitt, a well-known Philadelphia architect, and an amateur photographer of many years' experience; Mr. D. A. Partridge, also an accomplished amateur; Mr. Thomas B. Craig, the artist; Mr. John Sartain, whose name is a familiar one to all versed in art matters, and who is the Vice-President of the School of Design for Women in Philadelphia; and Mr. Wm. H. Rau, a professional photographer, whose ability and skill are well known throughout the country. Their decisions, as to the awards, was made known on Wednesday afternoon, and, in describing the most striking exhibits, we will treat first of those to which diplomas were awarded.

As in many cases work was shown in quite a variety of sizes and of very decided merit, the judges subdivided some of the classes so as to properly recognize the most meritorious work. This was the case with Class 1, which was devoted to landscapes by professionals only. The diploma for Class 1A, landscapes, 11 x 14 and over, was awarded to Messrs. W. H. Jackson & Co., of Denver, Colo., for an 18 x 22 view of the Spanish Peaks, Colorado. The distant snow-clad mountains were beautifully rendered, with some excellent light effects on the low hills in the middle distance, the whole being in strong contrast with a dark tree and other foliage in the foreground.

This firm sent sixteen frames, mostly filled with large pictures of views in Mexico, Colorado and other parts of the far West.

*Class 1B.*—Landscapes under 11 by 14. J. P. Gibson, of Hexham, England, was awarded the diploma for this class, for his 6½ x 8½ landscape "An Autumn Evening on the South Tyne." This picture has already been awarded two prizes at English Exhibitions. All his work is remarkable for its exquisite softness and detail, much of the artistic effect being due to his working largely against the light. His success in this manner of working is remarkable. Mr. Gibson sends twelve pictures. Among them, "The Blasted Oak," which has taken three prizes in England, also three others which have been awarded prizes at various English exhibitions.

*Class 2A.*—Landscapes, 8 x 10 and over, by amateurs. George Bankart, of Leicester, England, was awarded the diploma for this class, for a 10 x 12 landscape with Tintern Abbey in the distance. This was one of the few specimens of wet collodion work in the exhibition. Mr. Bankart sent twenty-four specimens of his work, which was one of the finest collections received, and attracted great attention. A view of Loch Awe was an exquisite bit of landscape, with rocks in the foreground and a tree under whose branches the lake, with a pretty island, could be seen. Two other diplomas were awarded to Mr. Bankart, of which we shall speak later on.

*Class 2B.*—Landscapes, 5 x 8 to 8 x 10, awarded to John G. Bullock, of Philadelphia, for a view on Brandywine Creek. Three children are well posed in the foreground, with a cart approaching along the road. The road, running along the borders of the stream, carries the eye through a pretty vista into the distance. Technically and artistically, Mr. Bullock's work is remarkable, and excited much admiration. Among his other notable pictures is a view across Moosehead Lake, in which a pine tree against a partly clouded sky has a



strikingly beautiful effect. An avenue of beach trees is another specimen of good work shown by him.

*Class 3.*—Landscapes,  $4\frac{1}{4} \times 6\frac{1}{2}$  to  $5 \times 8$ , by amateurs. This diploma was awarded to Robert S. Redfield, of Philadelphia, for a well composed picture in which the figure of a boy is seen resting beside a stream in a quiet shady spot; under an arch of foliage, full of fine detail, a rustic bridge appears. This picture is one of the set which was awarded the first prize for landscapes at the exhibition of the Boston Society of Amateur Photographers held last November.

Among Mr. Redfield's other pictures are two of children blowing bubbles, in one of which a bubble is floating in the air, and the child's face is expressing his admiration in an almost audible "oh!" "Feeding the Donkey" is also a good figure composition.

*Class 4.*—Landscapes, under  $4\frac{1}{4} \times 6\frac{1}{2}$ , by amateurs, awarded to Joseph H. Burroughs, of Philadelphia, for one of his "Bits by the Roadside." This is a good composition, a road beside a stream, with a pretty effect of distance and good technical work.

*Class 5.*—Marine views, surf, by professionals. No award.

*Class 6.*—Marine views, sail, by professionals, to Messrs. G. West & Son, of Southsea and Gosport, England.

The picture chosen as the best in this class represents four yachts becalmed. There is a pretty reflection from the quiet surface of the water, and the composition is good, but many pronounced it the easiest picture in the lot to make. Among the thirty-two pictures sent by this firm are many most difficult subjects, which required quick judgment and the nicest artistic perception as to the proper moment to "shoot," as well as great experience in development.

*Class 7.*—Marine views, surf, by amateurs, to Professor Henry A. Rowland, of Johns Hopkins University, Baltimore, for a picture of surf at Cranberry Island, Maine. This is one of the most successful pictures of the kind we have ever seen, an incoming breaker being shown just at the right instant, as it is curling over at one end. Professor Rowland also showed one frame of nine pictures, made in various parts of the country from Maine to the Yellowstone, all on home-made plates, a feat of which few amateurs in this country can boast.

*Class 8.*—Marine views, sail, by amateurs, to C. R. Pancoast, Philadelphia, for the cutter Genesta, which shows the soft, sharp, clean work peculiar to all his pictures.

*Classes 9, 10 and 11*, for figure compositions, were all awarded to Mr. George B. Wood, of Philadelphia, for three of the composition subjects in which he excels so highly. Mr. Wood exhibited fifty pictures in all, mostly figure compositions, with a sprinkling of landscapes and architecture. His "Village Smithy" pictures were particularly good for such difficult subjects, as were also the "French Lesson," "Reading Aloud," "A Rainy Day," etc.

*Class 12.*—Landscapes, by ladies, to Miss B. Snow, Brookline, Mass., for a view of Pike's Peak and Hotel, Colorado Springs.

*Class 13.*—Marines, by ladies, to Miss E. M. Tatham, Philadelphia, for a beach scene with bathers.

*Class 14A.*—Figures, by ladies, to Miss Jessie Gibson, Glasgow, Scotland, for a composition entitled "It's Just Our John Come Home," a companion to another called "Surely that is Some One at the Gate." Miss Gibson has

succeeded very well in composing pictures to illustrate certain titles or stories, and deserves great commendation for her efforts in this direction. Her example should be more largely followed by all amateurs.

*Class 14B.*—Interiors, by ladies, to Miss I. R. Hooper, Boston, for four interiors showing good technical work. This lady also sent some excellent landscapes.

Among the other lady exhibitors may be mentioned Miss Latham, of Liverpool; the Misses Kendall, of Brookline; Miss Butterick, of Brooklyn, who exhibited a good group of children with a goat-wagon, also an excellent interior; Miss Vaux, of Philadelphia; Miss A. H. Chace, of Rhode Island; Miss Corlies and Miss Price, of Philadelphia.

*Class 15.*—Cottage Door. Special composition, to Mr. W. L. Shoemaker, of Philadelphia, for a frame of four pictures illustrating this title. Mr. Shoemaker is one of the few professionals who have attempted to make this sort of picture, and his success should stimulate others in the same direction. His work is extremely good.

*Class 16.*—Wayside Fountain, to C. R. Pancoast, for a girl dressed in white filling a cup at a spring by the roadside. This picture is an enlargement on Eastman's bromide paper.

*Class 17.*—Village Smithy, to Mr. W. L. Shoemaker, for a set of four pictures of high technical and artistic excellence, representing the village farrier at work, and an interior of a blacksmith-shop.

*Class 18.*—Ploughing. No award.

*Class 19.*—Animals, to Dr. H. M. Howe, Philadelphia, for his stallion Grattan. Comparatively few animal pictures were exhibited, but had the number been much larger, the judges could hardly have found more deserving work than Dr. Howe's. The picture which received the award was a remarkable photograph of a beautiful horse full of life and spirit, and full justice was done the subject by the careful management of exposure and development. Dr. Howe also showed a picture of a torpedo explosion in Newport Harbor, taken during President Arthur's visit there a year or two ago. Some fine cloud effects were included in this exhibit.

*Class 20.*—Still life, to Mr. S. Fisher Corlies, Philadelphia, for a fine game picture of two canvas back ducks.

This gentleman was also awarded the diploma for *Class 21*, flowers, fruit, etc., for a basket of raspberries, which only wanted color to make them perfection. Among his other good things was a scene in a cotton field during the picking season, a fine picture of chrysanthemums in bloom, and a cottage door, which was one of the prettiest compositions in the exhibition. A girl with a spinning-wheel was gracefully posed in the doorway of a cottage, around and over which the foliage of a vine completed a picture of rare merit in every way.

*Class 22.*—Trees, to Mr. John C. Browne, of Philadelphia, for a large Catalpa tree in full bloom, by all odds the finest picture of the kind exhibited. Mr. Browne showed a number of other beautiful prints, all from negatives made on wet collodion plates at a time when lots of hard work was necessary, and when to produce such gems as he shows was much more difficult than it is in these days of ready-made plates and short exposures.

*Class 23.*—Snow and ice, to Mr. John E. Dumont, Rochester, N. Y., for

his American Falls, Niagara, in winter. A fine subject, beautifully treated, the effect of light and shade on the snow and ice formations about the Falls being exquisitely rendered. Mr. Dumont's picture, "Listening to the Birds," which was awarded a diploma in New York, was also shown here. Among his other pictures which struck us very favorably, were a steamboat on the Hudson, with the light almost entirely behind it, but with full detail on the shaded side, a bit of light at the bow brightening up the picture in a very effective manner. The cloud effect in his "Early Morning on Lake Ontario" was very good.

*(To be continued.)*

## THE MAGIC LANTERN AND ITS APPLICATIONS.

BY L. H. LAUDY, PH.D.

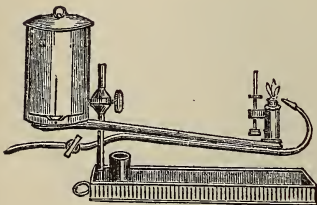
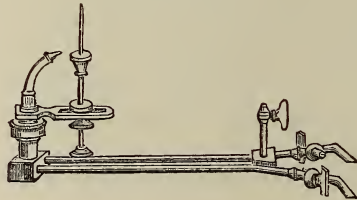
*(Continued.)*

WE now come to the consideration of the jet of the oxy-hydrogen light used in connection with lime as a source of illumination in the lantern.

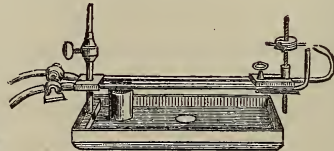
Jets are divided into blow-through, simple and compound. The blow-through include those that burn ordinary illuminating gas or alcohol to supply the hydrogen through which the oxygen is made to pass. These jets are simple in construction and produce fairly good results.

The simple jet is one where the oxygen and hydrogen gases mix at the tip and are not combined until they leave the aperture of the delivery tube. With this jet ordinary illuminating gas can be used direct from the fixtures; it gives a better light than the blow-through, but both of these are more expensive in consumption of gas than the compound jet, which differs in this respect, that the

COMPOUND JET.



ALCOHOL JET.



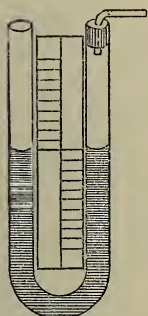
SIMPLE JET.

FIG. 5.

two gases mix in a small chamber, or tube, before they pass through the tip of the jet, yielding the greatest intensity of light with least consumption of gas. This latter is the principle of all the best forms of jets now used in lanterns. With this jet it is essential to have the gases under a pressure of 4 or 5 inches of water, and it is mostly used in connection with cylinders.



At times it is convenient to determine this pressure, and a simple piece of apparatus which can be easily made, consists of a bent U-shaped glass tube about three-eighths of an inch inside diameter, with branches about eight inches long on each side. A wooden or metal scale is placed between the branches, divided into inches and tenths, in the middle of which is placed a zero point. The tubes are filled with colored water to the zero mark. When the gas is turned on it depresses one column and raises the other. The sum of the two readings indicates the pressure. See Fig. 6.



PRESSURE GAUGE.

FIG. 6.

Some of the compound jets are perforated by small openings in the mixing chamber, giving the gases a circular motion, producing a more uniform delivery and are not as liable to produce that annoying hissing or whistling sound which is often heard in the lantern. This noise is due more largely to imperfection in the tip of the jet, which is made either of brass, iron, or, in some cases, tipped with platinum. The openings vary in size and number—some have one, two, or even three holes. Those that have been thus far a success are the jets with single openings, which in all cases should be perfectly round and smooth on the inside, that the gases may pass with little friction, thus preventing hissing or whistling. The size of opening for a jet used for a very intense light is about  $\frac{1}{16}$  of an inch, the usual size being about  $\frac{1}{20}$  of an inch.

The pressure at which the gases burn at the jet and the amount consumed per hour had never been determined, so far as I am aware, and feeling that this somewhat disputed question might be put at rest, I determined to make these measurements, and the experiments were conducted in the following manner: Two gas meters reading cubic feet per hour by minute observations, one for oxygen, the other for hydrogen; two water-pressure gauges divided into inches and tenths; two wash-bottles to watch the flow of the gas and prevent explosion; and a compound jet with an opening  $\frac{1}{16}$  of an inch, comprised the apparatus. The light was started, the pressure noted, and the amount consumed read from the meters by six observations, the average of which is as follows:

Hydrogen consumed per hour.....	$4\frac{2}{10}$ cubic feet.
Oxygen       “       “       “ .....	$3\frac{6}{10}$ “       “
Pressure at the jet was.....	4 inches water.

The pressure was much less than was anticipated, being equal to about five ounces avoirdupois on the square inch.

One of the essentials to success with the lantern when the lime light is used, is the careful selection of the lime cylinders. The limes used should be hard and compact, and free from fracture; of about three-quarters of an inch in diameter and two or three inches long. They can be purchased in this form, but in preference to buying, many make their own limes by cutting them from any good unslacked lime; they can be easily shaped by using a good coarse flat file. The effect of the great heat upon the lime is to produce a pit or cavity which reduces the intensity of the light, and the flame is liable to be deflected and strike the condenser, producing a fracture; to prevent this it is necessary that the lime should be turned every few minutes. Some holders for the lime are so arranged

as to give a rotary motion to the lime by means of clockwork, which is rather a scientific refinement than of practical importance.

After using the limes and when nearly cold, they should be placed in a well-stoppered bottle, free from moisture, and can be used over and over again, care being taken to examine them for any defects before use. Some limes can only be used once, and it sometimes happens that a lime has to be changed during an exhibition. It is always well to allow the hydrogen to heat the lime before admitting the oxygen, for a too rapid heating is the cause of fracture, in which case the lime must be rejected.

*Oxygen.*—For a supply of this gas we depend upon some salt that contains it chemically combined, and one that will yield it at a moderate heat. The only practical compound is potassium chlorate, which, when heated, gives off its oxygen, leaving potassium chloride. When the chlorate is heated alone it melts and the gas is disengaged very rapidly. To prevent this too violent chemical decomposition it is mixed with some gritty material, as sand or powdered glass, or, better still, the oxide of manganese. With this mixture the gas is liberated at a far lower temperature. The oxide of manganese does not yield any oxygen, remaining quite unaltered, and is only added to modify the too rapid chemical action. The materials used must be commercially pure and free from organic matter. The chlorate comes in crystals, which is pure enough; the manganese is a black powder and is called black oxide of manganese. This should be tested by heating on a metal plate or iron spoon, and should it give sparks or flashes it must be rejected. The proportions best adapted for the largest yield of oxygen at a moderate temperature are chlorate 100 parts, manganese 25 parts, by weight. This mixture is introduced into a retort, made either of Russian iron or copper, which is placed on a support, and heat applied. The delivery tube from the retort should connect with a wash-bottle, from which the gas passes to suitable holders. The practical yield of oxygen from one pound of chlorate is from  $4\frac{1}{2}$  to 5 cubic feet, or about 30 to 38 gallons. There is no danger attending the preparation of oxygen if you have pure materials and a large delivery tube from the retort and wash bottle.

This gas is now manufactured on a large scale and has become a commercial product. Gases occupy so large a space, that it is found more practical and convenient to compress them for transportation in metal cylinders holding from 10 to 75 cubic feet. The compression is about 12 volumes, or 25 cubic feet, in cylinders of 2 cubic feet capacity, which requires a pressure of 225 pounds on each square inch. The principal cost is in the time and power required to compress the gas in the cylinders. The convenience, however, more than compensates for the trouble of making and storing the gas, and it is now to be obtained in all the large cities.

The delivery cock from the cylinders, which is situated on the top, has a fine-threaded movement, and by carefully moving it from left to right with a key or handle, the gas can be delivered to the jet at a low pressure and in small quantities.

In some institutions, where a permanent position is secured, and it is convenient to store a large quantity at a time to last for a number of lectures or use in the laboratory, they generally make the gas and store it in large gas-holders, which deliver it at an equal pressure to the lantern.

When small quantities of oxygen are required several methods have been employed. The most simple is heating the oxygen mixture in small retorts or long tin tubes, and conveying the gas either to a rubber bag or small gas-holder, and thence to the lantern. The tin tubes can be made of different lengths or sizes, depending upon the amount of gas to be generated; and the holders being small, the gas can be regulated by only heating a small portion of the tube at a time, of course applying the heat at first to the end of the tube nearest the outlet. By this means you are enabled to generate the gas at the same time that it is consumed. This is said to have been first introduced by Mr. M. Noton, of England, where it is now used, and is reported to give satisfactory results.

In using cylinders it is important to have a pressure gauge indicating to 235 pounds, that you can determine the decrease in pressure after using, and should they indicate only 75 pounds, it is well to have them replenished before using.

*Hydrogen.*—The so-called hydrogen supplied in cylinders is the ordinary illuminating gas, and for all practical purposes gives as good a light as does pure hydrogen. When required on a small scale, it is generated by decomposing water by means of sulphuric acid and metallic zinc. Special apparatus is required for the preparation of this gas, and can be purchased with full directions from all dealers in lantern material.

This gas is highly combustible, and when mixed with air or oxygen produces a dangerously explosive mixture, and for that reason is not to be recommended when stored in rubber bags, the use of which is fast being superseded by the use of gas compressed in cylinders. In this latter condition it is considered perfectly safe, as the gas is always under pressure sufficient to prevent running back and exploding. In most cities or towns a supply of illuminating gas can now be found, which can be run into the gas bag for use, doing away with the manufacture of hydrogen. When it is found necessary to use hydrogen from a bag, it is always important to introduce between the bag and jet a wash bottle, which precludes a possible ignition and explosion. It is far more safe to use the gas compressed in cylinders or from the gas-pipe direct; for in this way we avoid all possible chances of an explosion.

This gas in cylinders is furnished by the same companies that supply the oxygen, and the cylinder is usually painted black to distinguish it from the oxygen, which is painted red.

I have enlarged somewhat upon the dangers attending the use of this gas when used from bags, for the reason that those who may wish to experiment with it, and not thoroughly understanding the nature of the gas, and whose experience may be limited in preparing and handling combustible gas, this caution may not be out of place, as exhibitions at times are brought to a sudden termination from an accidental explosion by the flame running back on the unequal pressure, which allows the gases to mix and ignite. It requires considerable skill and experience in handling hydrogen from bags, and whenever possible, use the gas compressed in cylinders. Some attempts have been made to substitute some of the more volatile bodies, such as benzole, gasoline, ether, etc., to produce the hydrogen by passing air through them, or to vaporize them direct; and were it not for the combustible and explosive nature of these bodies, they would no doubt meet with more approval.

*Size of Lantern.*—The size of the body is only a matter of fancy. Some



manufacturers still make them large and imposing to attract attention, while others resort to nickel-plating and much highly finished brass-work. The aim at present is to reduce the size and weight to suit circumstances; for a small body, if well ventilated, is all that is necessary. The only function of the body is to prevent the light being diffused in the room. Some of the last forms of lantern are constructed by mounting the condensers and objective upon a base board; and attached to the jet is a metal cone with a small opening for the light to enter the condensers, the lime being covered with a small hood, thus doing away with a body entirely.

Some of the older lanterns measured 18 inches high, 14 inches wide and 20 inches deep, for the reason that the condensers were large and the focus sometimes as much as 9 to 15 inches, with a chimney having two angle elbows and 16 inches high.

There are many designs of lanterns to be found in the market, all of which no doubt are possessed of some merit. If the lantern is designed for transportation, it should be as compact and light as possible. If to be located in a lecture-room or hall the weight is an advantage, as it makes it more rigid and will better carry the vertical attachment, gas microscope, or polarizing elbow, and such accessory apparatus as is necessary. If designed for use with the electric light, it is usual to place the body upon four pillars or uprights, to admit the introduction of some form of regulator to be used with the arc light. It is of great importance to have the jet so arranged that the operator can make the adjustments from the outside, and thus avoid the light being diffused from opening the door of the lantern, which has a tendency also to reduce the light upon the screen. In fact some exhibitors take the precaution to inclose the operator and lantern in a dark room made of cloth, making it impossible for any light to gain entrance to the audience.

It will be impossible to give dimensions that would be of any value, as each maker sets forth certain claims for this or that size lantern, and the matter is left with the reader to buy, make or use any size body that he may desire.

The materials used are mostly metal; in some cases wood is used for its greater beauty of finish, but this requires to be lined with metal to protect it from the intense heat. By consulting the catalogues of dealers, the reader will in this way get an idea of the many designs and the magnitude of the industry; for it has now become an important factor in science, education and amusement.

*(To be continued.)*

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[From Photographisches Wochenblatt.]

## V. SCHUMANN'S ORTHOCHROMATIC PLATES.

THE following letter of SCHUMANN'S to DR. STOLZE was read at the meeting of the Berlin Photographic Society on December 3, 1885:

LEIPZIG, December 2, 1885.

DEAR FRIEND,—A comparison of my orthochromatic plates with those in the market for the taking of colored objects, leads me to expect that the sensitizing process perfected by me during the last few weeks might be of advantage to the practical photographer, as the method in its present form can be applied to almost every kind of plate. Without any practice, and very little trouble, every

photographer is enabled to prepare his own orthochromatic plates, and the expense is hardly worth talking about.

The practical operator can also, by suitable graduation of the sensitizer, adapt the coating to the purpose required, and in this way help to improve the process. Only so can the chaff be separated from the wheat.

In this sense I send you herewith thirteen of my negatives, lately made, and beg to present them to the meeting for its opinion. It would be very agreeable to me to have my plates submitted to a sharp and severe criticism. Do not fear that it might have any disagreeable effect upon me; on the contrary, I shall always be thankful for any suggestions in regard to the completion of the process.

Regarding the negatives, I would like to make the following remarks: All plates were exposed by kerosene light. Sunlight was not at my disposal, most of my work being done at night. The color-effect of sunlight will, of course, not be so favorable as that of kerosene light, as yellow glass is not used. The lamps had Cosmos burners, one of 7 the other of 10 lines.

### *Lenses.*

For the larger oil painting, Aplanat, 15 lines, 7-inch focus.

For the smaller oil painting, double objective of 16 and 18 lines,  $3\frac{1}{4}$ -inch focus. Both without diaphragms and yellow glass, the kerosene being rich in yellow and red rays.

Reflectors made of white paper were placed on four sides of the lamps, sideways, to avoid the glitter from the original.

### *I.—The Sensitizing Cyanin Solution.*

Cyanin .....	1 gram.
Absolute alcohol .....	500 c.c.

To be well shaken.

### *II.—Baths.*

First bath, to soak the dry plates for two minutes:

Distilled water .....	200 c.c.
Liquid ammonia .....	$\frac{1}{2}$ to 4 "

Second bath for sensitizing the soaked plate. For my plates Nos. 1 to 8, soak for two minutes in

Distilled water .....	200 c.c.
Liquid ammonia .....	2 "
Absolute alcohol .....	10 "
Cyanin solution .....	5 "

Nos. 11 and 12 soak for two minutes in

Distilled water .....	200 c.c.
Liquid ammonia .....	4 "
Absolute alcohol .....	10 "
Cyanin solution .....	10 "

Put the bathed plate upon blotting-paper and dry quickly. It took me from two to three hours. Care has to be taken not to touch the edges of the film with the fingers, as this easily leaves a mark.

Expose soon after drying. The sensitizer (cyanin) seems to lose strength. The bath also decomposes somewhat; a fresh one is therefore always advisable.

## SOME REMARKS ABOUT THE PLATE BATH.

The preliminary bath effects an even coloration of the film in the cyanin bath following the same. Ammonia in the preliminary bath moistens the film better, avoids bubbles, and sensitizes a little.

*The Cyanin Bath.*—Water effects the penetrating of the coloring matter into the film. Ammonia increases the sensitiveness of the cyanin for the weakly refractive rays (red, and also yellow), and restores the total sensitiveness reduced somewhat by cyanin. Alcohol keeps the cyanin in solution and retards its decomposition, which without alcohol would sometimes take place very quick. Cyanin sensitizes for orange, and just as strong for yellow, when introduced to the dried plate through an ammonia bath. The bathed cyanin plate distinguishes itself particularly from the plate colored in the emulsion by its high yellow sensitiveness, besides the red sensitiveness.

The emulsion must contain no iodide of silver when the plate is to be more sensitive for red and yellow spectrum rays than for blue ones. This point is important. An emulsion containing only one per cent. of iodide of silver was only half as sensitive for spectrum red as an analogously prepared pure bromo-gelatine one.

The cyanin bath gives to the pure bromo-gelatine similar properties to the iodide of silver, when precipitated simultaneously with bromide of silver; the cyanin sensitizing only much stronger for the luminous rays than iodide of silver, and gives much finer plates. I find with all plates that it has an antifogging effect.

If a strongly-sensitized bromide of silver plate is exposed to the solar spectrum by way of the slit, a suitable opening and very short exposure will show that the maximum in yellow and orange surpasses the blue maximum only very moderately; but if exposed longer, so that only a very fine hue appears upon the plate as before, then the maxima will increase in the luminous part, and increase surprisingly in intensity. Yet the light effect will lead here much quicker to solarization than in the blue, which always excels by a moderate intensity.

The spectrum orange having less luminous strength than the spectrum yellow, the red sensitiveness of my plates, although the maxima of both districts are pretty equal, is of still more advantage to the restoration of the artificial colors in their luminous relations than the yellow sensitiveness.

The development of the cyanin bath plates requires particular care. I have failed herein for a long time and had no success, and therefore recommend only your potassium developer, but according to Eder's modification. Iron I do not want. Your potassium is excellent, and particularly because it is suitable to all conditions with the aid of bromide of potassium. For a plate 13 x 18 c.m., I take 60 c.m. water and commence with only six drops of potash, six drops pyro, one drop bromide potassium, and, by degrees I add one to one and one-half times as much developer, but no water. It takes four to six minutes to finish a plate. Accelerating the appearance of the picture reduces the success, and generally produces heavy fog. If I need a very clear plate, I take four drops instead of one drop of bromide of potassium, develop for several minutes, replace the old by a fresh developer without bromide of potassium, and let it act until all details have appeared. I have treated Plate No. 12 this way.



The plates I send you have been numbered in rotation as exposed and executed. Plates with the same number were coated with the same emulsion,\* but they were exposed singly and developed under the same conditions of light. In developing, the colored plate was, on the contrary, always an advantage, as otherwise I would have obtained a less favorable result for the same, or relatively too much detail upon the cyanin film.

To develop two plates of different sensitiveness in one tray at the same time to find out the proportion of sensitiveness is a great absurdity.

Most of the plates were not fully exposed. This will show the contrast to better advantage.

That the details in some parts are so thin that they will hardly show in the print I recognize very well, and this seems to be still a sore place in the plate.

All plates were bathed in alum after developing; this strengthened them somewhat and liberated the cyanin coloration.

Please tell me if you think the intensity of these plates to be sufficient. I am not certain about it myself, having had no time to make prints from the same.

By intensifying them they certainly can be used.

My plate seems to possess a great advantage. It will hold the shadows in the white details, even in the finest drawing, for a very long time. This is of great importance in the production of colored pictures, as assured by Dr. E. Albert.

Finally, one more remark. I should not be surprised that from different sides assertion will be made that my process affords nothing new and had already been published, even by photo authorities. I will not contradict this. The bathing of plates has been known and has been applied, preferably by some experimentalists. A similar composition to my bath was recommended by Eder. Even the preliminary bathing is not new, and also several other things which I have adopted. But to stop at once all objections that might be raised against my process, I would like to propose the following questions:

*First.*—Which orthochromatic gelatine plate has so far been more sensitive for prismatic spectrum red and yellow than for spectrum blue?

*Second.*—Which plate with such a high-color sensitiveness has had such a total sensitiveness?

*Third.*—Which plate with such a total excitability has worked free of fog; and, above all things, has shown a pure, blameless film?

As long as these questions find no refutation, I believe I have a claim to the novelty of my sensitizing method.

The causes of ill-success (formation of spots—H. W. Vogel) are clearly perceivable from the number of my plates leading to the present process.

With friendly greeting,

Yours,

V. SCHUMANN.

After reading the above letter and careful examination of the plates sent in, the society resolved unanimously to publish the same at once, to make it known to all photographers abroad.

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\*Only those marked sensitized were bathed. A colored and an uncolored plate were always exposed, to prove the reliability of the process.

On motion of Mr. Carl Suck, the society voted to Mr. V. Schumann A DIPLOMA OF HONOR for excellent accomplishments upon the field of spectrum and orthochromatic photography.

*Translated by H. D.*

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**PHOTOGRAPHERS' ASSOCIATION OF AMERICA.**

St. Louis, Mo., January 16, 1886.

FIRST MEETING OF EXECUTIVE COMMITTEE FOR 1886.

*Present:* W. H. POTTER, *President*; H. McMICHAEL, *Secretary*; G. M. CARLISLE, *Treasurer*; G. CRAMER and D. R. CLARK.

Past Officers: J. LANDY, W. A. ARMSTRONG and JOSHUA SMITH.

Meeting called to order by G. Cramer, Chairman.

*Resolved*, That the Chairman appoint an Auditing Committee. W. H. Potter and D. R. Clark were then appointed, and by motion G. Cramer was added to the Committee. The Treasurer and Secretary then presented their reports, which were referred to the Auditing Committee.

*Resolved*, That the Local Secretary receive \$250 as compensation for services for the year 1886.

*Resolved*, That all Members of the Association be welcome to our Executive Committee meetings. A draft of a new Constitution and By-Laws presented by Mr. Cope, of Philadelphia, was referred to a Committee on Constitution and By-Laws.

Mr. Robert Benecke was then elected Local Secretary.

Adjourned to meet at Exposition Building at 3 P.M.

**EVENING SESSION.**

Mr. Cramer then stated that, according to Article 4, Section 2 of Constitution, the President-elect is entitled to preside over the Executive Committee meetings, and therefore resigned his position to the President, W. H. Potter.

Mr. Cramer, on behalf of the photographers of St. Louis, invited the members of the Executive Committee to be present at a meeting of the Local Society on Monday evening next.

Accepted.

*Resolved*, That the Seventh Annual Convention be held June 22d to 25th inclusive.

Adjourned.

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**JANUARY 18TH, 10 A.M.**

Meeting called to order by President Potter.

*Resolved*, That the proposition of C. D. Mosher, of Chicago, be returned as being too complicated for action by the Executive Committee.

Mr. Joshua Smith was appointed to confer with Mr. Mosher in regard to the same.

*Resolved*, That G. M. Carlisle be authorized to procure proper badges for 1886.

**PRIZE MATTER.**

Mr. Joshua Smith was appointed to receive further contributions to the Medal Fund.

*Resolved*, That the Chair appoint a Committee of three on design of medals. Committee appointed, Joshua Smith, J. Landy, F. W. Guerin.  
Adjourned.

#### AFTERNOON SESSION, 3 P.M.

Competitors for the prizes offered by the Association are requested to answer the following questions and sign a certificate as below.

#### *Questions.*

- 1st. What lenses are used?
- 2d. What make of plates?
- 3d. What developers?
- 4th. What paper?
- 5th. Add any special information as to developing, intensifying, reducing, etc., that you may consider of value.

#### *Certificate.*

I, the undersigned, certify on honor, that each and every photograph entered by me to compete for prizes offered by P. A. of A., at the Convention, to be held at St. Louis, Mo., in 1886, is printed from a negative or negatives made since the Convention of said Association held at Buffalo, N. Y., July 14 to 18, 1885.

*Resolved*, That the prize shall be awarded by a Committee of five members of the Association, to be appointed by the President, subject to the approval of the Executive Committee.

The report of the awards to be made Thursday morning.

*Resolved*, That twelve silver medals be awarded, in addition to the ten gold medals provided for by the resolution of the Association, and awards be as follows:

*For exhibits of Members of the P. A. of A., including United States and Canada.*

Six (6) gold and six (6) silver medals for the best twelve (12) exhibits of portrait photography.

Two (2) gold and two silver medals for best four (4) displays of other photographic productions.

*For foreign exhibits* one gold and one silver medal for best two collections of portrait photography.

One gold and one silver medal for best two displays of other photographic productions.

All foreign exhibits competing for prizes are to become the property of the association.

Two (2) silver medals of merit will be reserved for any contingency that may arise and will be awarded by the Executive Committee.

*Instructions to Judges as follow:*

Each member of the Committee to make his examination separately and consider the following four qualifications:

- 1st. Light and shade.
- 2d. Position.



3d. Composition.

4th. Chemical effects.

Ten (10) points shall be the highest award in any one branch, consequently forty (40) points are the highest that can be awarded to one exhibit by any one judge.

The exhibits having the most points shall receive the gold medals, those next the silver medals.

As all gold medals are of equal value, only the total result of the awards will be published. The same conditions shall govern the awards of the silver medals.

The Awarding Committee shall have a special meeting before the Thursday morning session to combine reports and come to a final result by striking an average.

*Resolved*, That the President appoint a Committee of three to award the one hundred dollar (\$100) prize offered by the Association for the best paper of practical value presented at the Convention, and that this Committee shall have one month's time to investigate before making the awards.

*Resolved*, A cordial invitation is hereby extended to all foreigners connected in any way with photography, to attend our Seventh Annual Convention at St. Louis, Mo., U. S. A., June 22, 1886.

*Resolved*, That Messrs. Cramer, F. W. Guerin and W. H. H. Clark, be a Committee on Hotels.

*Resolved*, That one session be held from 9 A. M. until adjournment each day during Convention.

*Resolved*, That the art and stock department be closed each day from 9 A. M. to 12 noon, to secure a full attendance at the meetings,

*Resolved*, That three hundred dollars (\$300) be set aside for a stenographer.

*Resolved*, That the President be a Committee of one to employ a stenographer.

*Resolved*, That the President appoint a Committee of two to revise the stenographer's report of proceedings before they are published.

H. McMichael and G. Cramer were then appointed on said Committee.

*Resolved*, That Samuel Wardlaw, of New York, and C. C. Kenny, of New Jersey, be appointed Vice-Presidents of their respective States, in addition to those recommended by the Nominating Committee.

*Resolved*, That the proposition received from Ex-President Beebe is considered by the Executive Committee beyond their province.

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#### PROGRAMME OF ST. LOUIS CONVENTION.

Address of Welcome.

Response by President, and opening of Convention.

Roll call of Members.

Reading minutes of last meeting.

Reports of Standing Committees, consisting of Chairmen of Executive Committee and Special Committees.

Report of Committee on Progress of Photography.

Appointing a Committee to nominate officers to select location for next Convention.

Miscellaneous business.  
Annual report of President.

## SECOND DAY.

Papers and Essays.  
Discussions.  
Papers.  
Discussions.

## THIRD DAY.

Committee on Awards.  
Report of Committee on Nomination and Location.  
New business.  
Practical manipulations under the sky-light and in the dark room.  
Printing.  
Election of Officers and selection of location.

## FOURTH DAY.

Report of Committees.  
Unfinished business.  
New business.  
Closing ceremonies.

H. McMICHAEL,  
*Secretary.*

BUFFALO, N. Y., January 25, 1886.

*To the Editors of the BULLETIN :*

Applications are already being made for space, and the outlook for the coming Convention seems very bright.

I begin to feel like going at it again, and in a few days will have all in running order. Will have diagram sent as soon as possible.

Very truly yours,

H. McMICHAEL.

## FOREIGN EXHIBITS AND ESSAYS.

*To the Editors of the BULLETIN :*

SHORTLY after the Buffalo Convention, I requested the lady and gentlemen named below to act as solicitors for exhibits and essays from foreign countries.

Mrs. Fitzgibbon-Clark for Mexico, Cuba and the Pacific States.

Mr. C. Gentilé, Austria, Italy, Portugal and Spain.

Mr. Ed. L. Wilson, France, Belgium and Holland.

Mr. J. Traill Taylor, Great Britain, Ireland and Russia.

E. & H. T. Anthony & Co. the German Empire.

Having all accepted, I now officially confirm these appointments.

The editors and publishers being pitted against each other, I hope there will be an energetic but friendly rivalry as to who shall secure the most important and extensive contribution to our next Convention from these sources.

W. H. POTTER.

ST. LOUIS, Mo., January 18, 1886.

[From the *Scientific American*.]

### A SUBSTITUTE FOR GLASS IN PHOTOGRAPHY.

SINCE the introduction of gelatine dry plates a few years ago, and the abolition of certain dirty and disagreeable operations connected with the practice of the art, photography has grown steadily in popularity as a pastime, and now thousands of persons in every rank and station of life own cameras and operate them to their own satisfaction and that of their friends, who, a few years since, would never have thought of attempting to practice the "black art."

Not only is the art practiced by many as a means of recreation, but is found an invaluable aid by professional men. Engineers, architects and draughtsmen use it for recording the progress of their work, making pictures of machinery, buildings, copying drawings, and an infinite variety of work, which saves a vast amount of hand labor. Physicians find it useful in making memoranda of surgical operations. Insurance men use it in inspecting risks and adjusting losses by fire. Artists find it indispensable as an aid to sketching. Correspondents for illustrated papers and magazines now carry cameras as a part of their outfits, and even traveling sign painters photograph their work and send in the picture as a voucher on which to draw their pay.

All this has been accomplished by the introduction of the gelatine dry plate; but there are many who are still prevented from practicing the art by the weight of the apparatus and material which has to be carried about to make even a few pictures. The weight of the glass is such a serious burden, especially in the larger sizes, that it discourages even the most enthusiastic after a few trials, and many cameras have been laid aside for this reason when they would otherwise be a source of unending satisfaction to their owners.

Numerous attempts have been made to obtain a satisfactory substitute for glass in the making of negatives, but little progress has been made until recently, when success seems to have crowned the efforts of an American concern which has been experimenting in that direction.

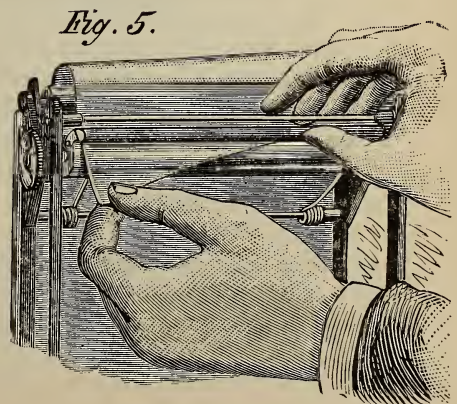
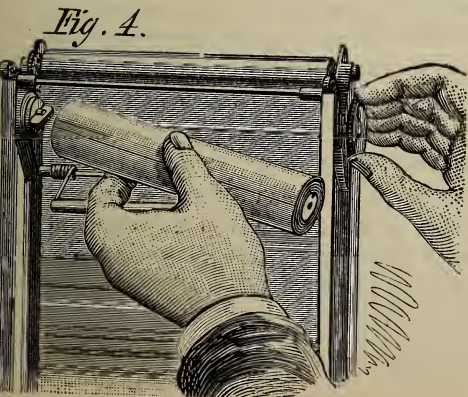
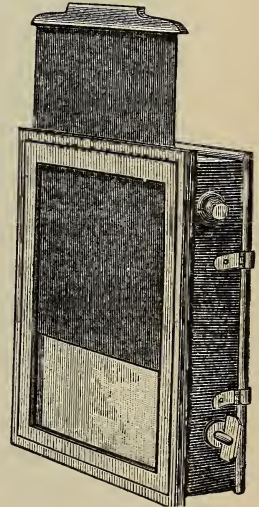
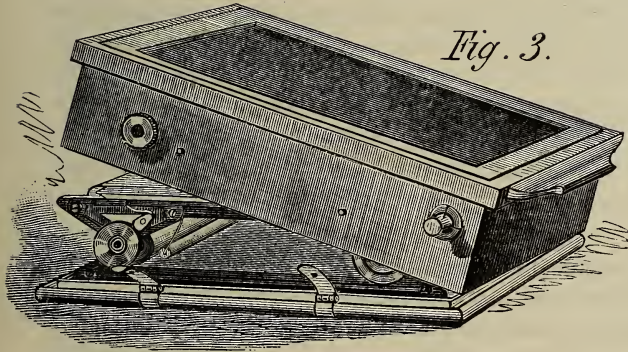
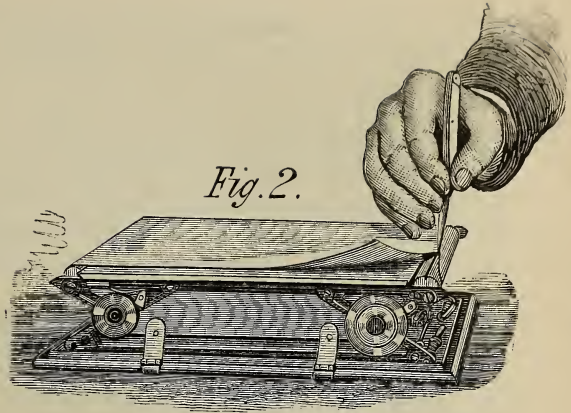
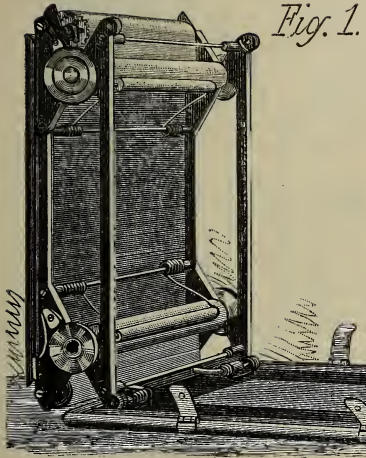
We refer to the Eastman Dry Plate and Film Company, of Rochester, N. Y., who have long been known as manufacturers of glass dry plates. By means of improved machinery, they have been able to produce a superior negative paper, possessing the characteristics so desirable in any sensitive film, such as extreme uniformity of coating, great sensitiveness, freedom from halation and other accidental defects often found in glass plates, at a cost much below that of ordinary dry plates, and of equal excellence. The paper possesses a wonderfully fine, close texture, and its surface is coated with an extremely sensitive gelatino-argentic emulsion.

Before describing the manipulation of the paper, it will be our purpose to explain the ingenious mechanism provided by the Eastman Company for exposing the paper in the camera, which is protected by several patents.

For the purpose of making a large quantity of the sensitive paper available in a small space when used in the camera, a holder, termed a "roll holder," has been devised. Fig. 1 illustrates the inside mechanism of the holder when it is thrown up or back, and when ready for use the whole is inclosed in a handsomely finished mahogany outside case, provided on its front side with a suitable slide, as plainly seen in Fig. 6.

Referring to Fig. 1, it will be noticed that the essential working parts of the





holder consist of a supply spool holding the sensitive paper, a winding-up reel, a wood exposing platform of peculiar construction, two guide rolls, and two spring pressure tension rolls, which bear upon the supply spool and winding reel; all being confined and held between two light metal side frames, braced and connected together at their ends by suitable tie rods. The back of the mahogany case is detachable, and is held in place by flat spring metal clamps, fitting over corresponding pins on the side of the case. (See Figs. 1 and 6.) The edge of the case fits in an annular groove cut in the inside surface of the back, near its edge, for the purpose of making a light-tight joint when the case is pressed home.

The light metal frame supporting the working parts is held to the removable back by four spring bolts, one pair at each end, which may be plainly seen on the right end in Fig. 1. By compressing the two bolts simultaneously inward with the thumb and middle finger, one end of the frame is released and easily elevated or thrown back, the opposite set of bolts forming a pivot or hinge. In this position the back forms a base to support the frame when placed upright. When the frame is dropped down, the spring bolts are again drawn inward, and, in shooting back, lock the frame to the back. Thus either end of the frame may be readily elevated, or it may be entirely removed from the back, permitting the operator to obtain easy access to the rollers in the dark room, when attaching or detaching the sensitive paper.

Figs. 2 and 3 show the metal frame down on the back in its normal position. At the extreme end of the metal frame adjacent to the exposing platform, and having their peripheries parallel with the surface of the platform, are two guide rolls, of such a diameter that their circumference measures one-quarter of the length of the exposing platform or of the length of the picture, whatever the size the holder is to make; one guide roll, termed also a measuring roll, will be seen at the extreme upper end in Figs. 1 and 4; and also at the right hand end in Fig. 2.

Parallel with its length will be noticed a tin-lined groove, which is used as a guide for the penknife or thumb-nail in accurately cutting off the exposed portions of the paper. Projecting at each end slightly above the surface of this guide roll, in line with the groove, are two metal points, which puncture the margin of the paper at each revolution, as it passes from the supply spool over the guide rolls and the exposing platform to the reel at the opposite end; a pin projecting out from one end of the guide roll pushes down a small flat spring secured to the under side of the exposing platform, which, flying up against the under side of the latter, as it is suddenly released, produces a loud click or alarm. In addition to the sound device, a spur wheel is arranged on the shaft of the guide roll at one end, which can be seen in Figs. 1 and 2, so geared that four revolutions of the guide roll will cause a second spur wheel to make one revolution of an indicator seen upon the outside of the case at its right hand end, Fig. 3, and upper end, Fig. 6. The indicator knob has a slot or recess at its inner end running diametrically across its center, which slips over the square head of the shaft of the larger spur wheel, and is held down by a spiral spring. It can be raised and turned independent of the spur wheel.

*(To be continued.)*



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 OBITUARY.

*A friend sends us the following:*

Died January 27, 1886, in the sixty-sixth year of his age, Silas A. Holmes, who for more than thirty-five years was recognized as one of the successful photographers of New York City. At the time of his death he was proprietor of rooms on Broadway. So brief was his sickness, that only three days prior to his death he attended to his usual routine of business duties, and hence may be said to have died in the harness.

In 1845 he entered into partnership with C. C. Harrison, and this partnership continued till 1847, when Mr. Harrison turned his attention to the making of photographic lenses.

Mr. Holmes continued at the old stand, and at one time in his business career was the most popular of the New York photographers, and during these years made money, which he subsequently invested in property that finally swallowed up his earnings. Hence at the time of his death was no richer perhaps than when he started.

On the announcement of his death, two of his personal photographic friends who best knew his financial condition, and that he left a wife and three daughters to mourn his loss, appointed themselves a committee and immediately called on the principal photo stock houses and the leading photographers of the city, who, without exception, expressed their sympathy in the most substantial form, and thus relieved his family from a burden that could only be responded to in heartfelt thanks.

The funeral took place from 434 East Twenty-sixth street on Friday, January 29th, at 12.30 o'clock. The officiating clergyman was the Rev. S. S. Seward, pastor of the Thirty-fifth street Church, between Fourth and Lexington avenues.

Thus another of the pioneers in photography has passed away—passed away through the gate of death to life—laid aside a feeble and worn-out body which could no longer answer the responses of the soul. Hence, death is a warder flinging open the gate that leads from mortality to immortality—a white wand usher introducing man to the higher realms of life; the great revealer that un-masks the mysteries of the future—the angel of loving mien, bidding the sorrowful to weep no more.

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THE Photographic Merchants' Board of Trade met at the Metropolitan Hotel, Broadway, New York, on Tuesday last. A number of the members visited the meeting of the Society of Amateur Photographers on February 9th. Among those present were Mr. G. Cramer, of the Cramer Dry Plate Co., St. Louis; Mr. George Eastman, of the Eastman Dry Plate and Film Co.; and Mr. C. Gentilé, of *The Eye*, Chicago.

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KEEP the BULLETIN coming, as I should feel lost without it. In it I glean so many valuable thoughts of such a practical nature, that it enables me to follow in the wake of those glorious leaders whose wealth of knowledge—no matter what it has cost them—only costs me three dollars a year.

P. ERSLEY.



# ANTHONY'S Photographic Bulletin.

EDITED BY

Prof. C. F. CHANDLER, Ph.D., LL.D.,  
Aided by ARTHUR H. ELLIOTT, Ph.D., F.C.S.,  
and a corps of practical assistants.

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**E. & H. T. ANTHONY & CO., Publishers.**

## PHILADELPHIA AMATEUR PHOTOGRAPHIC CLUB.

THE regular monthly meeting was held on the evening of January 18th, Mr. HAINES acting as temporary chairman.

The minutes of the previous meeting were read, and, after being amended, were approved.

Mr. Stuart, the Chairman of the Executive Committee, then read his report, which detailed at length the Lantern Exhibition given by the club at the House of Refuge in this city, on the evening of the 14th inst., to the great delight of nearly a thousand boys (in-mates) and about a hundred and fifty invited guests. In addition to the slides contributed by the members, a number of comic ones were shown, which caused much laughter among the boys. There was also excellent singing, kindly contributed by friends of our genial Treasurer, Mr. Thompson.

The club's next exhibition will shortly take place at Girard College, in the presence of probably two thousand boys.

These exhibitions never fail to give pleasure, and we strongly advise fellow-societies in other cities to go and do likewise. Nearly every society boasts of a lantern and screen,

and has the use of slides without number; the cost of gas, etc., need be but four or five dollars—a mere song compared to the pleasure given to the young people. The slides most in favor seem to be pictures of boats in full sail, horses running and leaping, dogs, cats and subjects of a like nature.

The Excursion Committee advised that the members be ready for an excursion on the 22d of February, the place of meeting to be named later.

The "Flower Study" contest, which was intended for this meeting, was postponed till June, as being a more favorable time. It was also decided that the contest for the February meeting would be a "Snow Scene;" and for March a portrait study, made in a room without sky-light; no retouching on negative or print to be allowed. Suitable prizes to be awarded the winner of each contest.

Mr. Stuart then said that Mr. Carbutt had offered to sell the club his oxy-hydrogen lantern for a very small sum; and as it is more suitable for a large hall than the one we now own, he asked that it be bought at once. The subject was, on motion, referred to the Executive Committee, with power to act.

Mr. Randall stated that he had just seen Mr. Bullock, of the Cincinnati Amateur Club, who is organizing a lantern slide exchange, and wishes the co-operation of our club. The details are not yet perfected, but will be shortly, when the subject would be again brought up for action.

After a lantern exhibition, the meeting adjourned.

W. WEST RANDALL,

*Secretary.*

## THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.

THE annual meeting of the society was held Wednesday evening, January 6, 1886, with the *President*, MR. JOSEPH W. BATES, in the chair.

The annual reports of the Treasurer and of the Executive Committee were read, and showed the society to be in a flourishing condition.

The Committee on Membership reported the election of the following Active Members: Dr. A. Graham Reed, Messrs. Caspar W. Miller, Frederick E. Ives, William L. Shoemaker, Francis Stokes and George Rau.

The election of officers and committees for the ensuing year resulted in the following choice:

*President.*

FREDERIC GRAFF.

*Vice-Presidents.*JOHN G. BULLOCK,  
JOSEPH H. BURROUGHS.*Secretary.*

ROBERT S. REDFIELD.

*Treasurer.*

S. FISHER CORLIES.

*Executive Committee.*GALLOWAY C. MORRIS,  
CHARLES R. PANCOAST,  
JOHN G. BULLOCK.*Committee on Membership.*HENRY T. COATES,  
FRANK BEMENT,  
FREDERICK A. WALKER,  
EDWARD W. KEENE,  
GALLOWAY C. MORRIS,  
CHARLES R. PANCOAST,  
WILLIAM A. DRIPPS,  
JOSEPH H. BURROUGHS,  
WILLIAM L. SPRINGS.*Excursion Committee.*CHARLES BARRINGTON,  
WILLIAM HAEKER,  
FRANCIS T. FASSETT.*Committee on Revision of Minutes, etc.*JOHN C. BROWNE,  
JOHN G. BULLOCK,  
ROBERT S. REDFIELD.

Mr. George B. Wood moved that a vote of thanks be tendered to Mr. Bates for his valuable services as President of the Society for seven years, which was carried unanimously.

In relinquishing his position of President, Mr. Bates expressed his great interest in the study and art of photography, which for thirty years had been his greatest pleasure. He hoped long to continue his interest in both photography and the Photographic Society.

On assuming the President's chair, Mr. Graff made the following address:

When, more than twenty-three years ago, with a few friends (some here present), I assisted in the birth and christening of the Photographic Society of Philadelphia, I scarcely believed that it would have reached so great an age, and that I, after so long a period, should have the honor now paid me of once more being elected the President of the now full-grown, almost middle-aged, association.

I have watched it through its early youth, when the daguerreotype still had its close attention; through its childish and boyish days, when its feeble steps were taken in albumen, malt, tannin, washed emulsion, and the whole catalogue of processes, wet and dry.

I have seen its increasing strength, from the ability to produce pictures in less than five minutes, to the portraying of the lightning flash in the infinitesimal fraction of a second.

I have witnessed the reduction of labor from hours of preparation and vexatious uncertainty of development, to the manufacture of plates ready to our hands, with almost certain production of beautiful pictures—all with so much ease and freedom from care, that the whole becomes an amusement such as any one, even with moderate skill and taste, can now indulge in.

And yet we look for more. What shall it be? Who can tell what is to be the future of our favorite hobby? How far will the next twenty-three years of this society see us in advance?

We now make pictures upon a paper-supported film and develop them into beautiful negative pictures. May we not hope to have the finished positive impressed upon the paper in the camera without future development, and even then in colors.

History has shown us that very many of the discoveries and improvements in photography have either been made or brought to usefulness by amateurs. Should this not be an incentive to our members for striving after even higher flights than those already made.

The exhibition of lantern slides, both public and in this room, have shown marked advance and been exceedingly creditable.

The venture now being made in holding a public exhibition, mostly of amateur work, is a very desirable effort, which I most sincerely hope, and make no doubt, will be entirely successful, and awaken renewed interest in the work it represents to the public as well as to our members.

I most heartily thank you, gentlemen, for the honor bestowed upon me this evening.

The election of officers and other business matters occupied so much of the evening, that it became necessary to postpone the reading of a paper, which had been announced for this meeting, on "Enlarged Reproductions," by Mr. George H. Croughton. This paper will be read at the February meeting, and it is expected that at the same time Mr. Walmsley will give a practical demonstration of enlarging by the light of Anthony's enlarging lantern.

Adjourned. Fifty-nine members were present.

ROBERT S. REDFIELD,  
*Secretary.*

## THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.

REGULAR MEETING, JANUARY 12, 1886.

THE meeting, held in the society's rooms, was called to order at 8.20 P. M., Mr. F. C. BEACH in the chair.

He announced the usual social meetings, and spoke of a plan he had devised for igniting two or three magnesium lights simultaneously. Should the preliminary experiments work well, the plan would be adopted on the night of the 26th inst.

He stated that, in the absence of Mr. Rich from the city, Mr. Henry V. Parsell had been made Treasurer *pro tem.*, and then announced the election, on December 2, 1885, and January 6, 1886, of the following gentlemen as members of the society: Active Members—William T. Buckley, Robert L. Belknap, M. L. King, M. D., James B. Ferguson, M. D., John B. McCue, Frank H. Carter, Frederick Bruce and Pierre Mali. Associate Member—H. Cazaux. Subscribing Member—Charles H. Loeber. Corresponding Members—James F. Cowie and F. W. Seuff. Honorary Members—J. Harris Stone, editor of the *Amateur Photographer*, and Captain W. de W. Abney, of England.

In acknowledging his election, Mr. Stone says: "I am in receipt of your courteous letter informing me of the unexpected honor your society has conferred upon me by making me an Honorary Member. I accept the compliment with thanks, not only personally, but as a Trustee of the Camera Club, and trust that the photographic bonds of union may yearly grow stronger and more intimate between your society and our club."

Captain Abney writes as follows, dated December 15, 1885, at Willeslie House, Wethersby road, S. W., London:

"DEAR SIR,—I have this day received your letter addressed to me at the Camera Club, informing me of my election as an Honorary Member of the Society of Amateur Photographers of New York. It is with feelings of gratitude that I accept this distinguished honor, not only as President of the Camera Club, but also as a personal matter. I am sure that the Camera Club will, on its part, look upon my nomination as a mark of good-will towards itself; and this will tend to cement those amicable relations which already exist between it and your society.

"May I ask you to convey to the society the high appreciation which I feel in thus becoming a part of it?

"Believe me, Dear Sir,

"Yours faithfully,

"W. DE W. ABNEY."

Continuing, Mr. Beach said: I desire to call your attention to a very fine enlargement which is hung upon our wall here to-night. It was sent to me for the society by Messrs. Morgan & Kidd, of London. It is styled a mezzotint argentic enlargement, and is made on the gelatino-bromide silver paper. It is one of their new productions, and I regard it as a very fine specimen of that class of work.

From Mr. Arthur Newbury I received a letter the other day in which he speaks of some new ideas he has gotten up. He is the Provincial Secretary at Charlottetown, Prince Edward's Island, and is quite an amateur. He stated in his letter that he had devised a contrivance by which a tripod at least ten feet high could be used. It is provided with a portable ladder on which he can climb up to the top of the tripod and take the picture (laughter), and it is also light and can be carried about very easily. I have invited him to send me further particulars. Among other things, he stated that he had a simple way of making a dark room light; that it consisted of a piece of ruby fabric made in the form of quite a good-sized cone. This is the idea. [Mr. Beach here illustrated by pointing to a diagram on the blackboard.] The cone of ruby fabric is simply set over a lamp or candle. The advantage is that you can fold this up, or roll it up and put it in your trunk very readily.

I received a call from another gentleman, who said he was very much interested in reading about the proceedings of our society, and knowing that we would like to see all the new things, he kindly brought me a contrivance that he had made in the shape of a box, which he used to carry the camera in. Instead of carrying around an extra dark lantern, he simply used his camera box, which he carried his camera around in, and made a square hole in one part of it near one end, and in that he put a sheet of ruby glass. Then he carried a candle in his pocket, and when he wanted to change his plate he would simply go into a dark closet and set up his box, put in a candle, and he had his light complete. He had some arrangement to let in the air at the bottom so as to feed the light. [By a diagram on the blackboard, Mr. Beach clearly illustrated the idea.]

I was very much interested in an article which I saw recently, on "Copying Paintings," in the *British Journal of Photography*, and as I have had some little experience in trying to photograph an old painting, I was quite interested in the suggestions which the



article contained. The great difficulty with old paintings is that the moment you set the camera up in front of one of them it is like a looking-glass, so to speak. It throws the light back into the lens; or, rather, reflects the light and reflects many other objects besides the painting, and when you develop the plate it starts off very well, but as soon as the details commence to show very nicely it all fogs over, and you cannot tell but what your plate is fogged. It is very annoying. I have spent three-quarters of a day I know in photographing a painting and putting it in all sorts of positions, and after all my endeavors I did not succeed as well as I ought to have done.

The plan that the article suggests is, first, to clean the painting off with rain water and a sponge and then wipe it dry with a clean linen cloth. If it is cracked use a little soap—clear, pure soap—and then wipe that off. Then the lighting is very important. The best plan is to put the painting under a good sky-light, a little way back from the sky-light, and have dark shawls and dark screens all surrounding the camera, facing the painting, so that there will be nothing whatever to come down to reflect upon the painting, and in that way it is claimed that a painting can be very successfully copied.

I desire to call your attention to the album here, containing pictures of the Flood Rock explosion, which we intend to present to General Newton. It is almost complete, excepting lettering, and is entirely the work of our members. The matter is in the hands of a special committee, which was appointed to look after it.

I also desire to acknowledge the receipt from Captain A. C. M. Pennington, U. S. A., through Dr. Janeway, of a pamphlet entitled "Instruction in Photography," by the late Major Lorenzo Loraine, First Artillery, revised by Henry L. Harris, First Lieutenant of the First Artillery at Fortress Monroe; and also another pamphlet, entitled "Improved Method of Photographing Histological Preparations by Sunlight," revised by J. J. Woodward, late Surgeon-General in the United States Army. These publications I believe are very rare, especially the last one, and will add materially to our collection in the library.

Dr. JANEWAY—I would like to correct the President in one particular. He spoke of Dr. Woodward as "Surgeon-General." It should be Colonel Woodward, late Surgeon United States Army.

Mr. BEACH—I gladly accept the correction.

Mr. Beach then exhibited a perfect working model of the novel vest camera shown at a

previous meeting, and operated the shutter very successfully.

Mr. PARSELL—What size pictures does this vest camera take?

Mr. BEACH—It takes a size about an inch square, and you can tell when the plate is entirely used up by the position of the little pointer on the central small button. Another ingenious point in connection with the apparatus is, that as you turn this little knob to change the plate you also wind up the spring for the shutter, and the spring always has the same tension wherever you start. The tension of the spring can be released or increased just as you wish.

Another improved apparatus is that designed by Mr. Parsell, and is intended to take small pictures,  $3\frac{1}{4} \times 4\frac{1}{4}$  inches, on paper. You see the apparatus is quite small and compact, and the first peculiarity noticeable is the means of registering on the outside the number of pictures that have been taken.

Now the next matter of interest will be another shutter, which is designed by Mr. W. C. Haddon and patented by him, and, at my request, he has kindly brought it here for my inspection. The main principle of the shutter is roughly sketched on the blackboard. It has two hemispherical-shaped leaves which fly apart and shut, and they are operated by means of a small arbor or wheel which is rotated by a string pulled with an elastic band. It is a very simple arrangement, and Mr. Haddon tells me that it works very satisfactorily. Will you please bring the shutter forward, Mr. Haddon, and explain it to our members?

In explaining the shutter, Mr. Haddon said, in substance, that there were two separate shutters or leaves, which overlap each other when closed a sufficient distance to exclude light, and which, when the exposure is to be made, are moved apart and brought together again by means of a revolving disk and connecting links.

As it is not necessary to have each leaf made much wider than one-half the diameter of the aperture, plus the amount of the lap, they can be made very light, and consequently are capable of receiving a rapid motion with a moderately strong spring, but in a drop or sliding or rotary shutter a larger area is required, and more weight has to be moved.

During the rotation of the central disk, the leaves have at first a relatively rapid motion, which becomes slower and stops as they reach the point of widest opening; then, during the continued revolution of the disk, they close with increasing rapidity.

By having the aperture in the shutter larger than the lens, the latter may be uncovered during a considerable portion of the time of the revolution of the disk, permitting a large amount of light to pass through.

The next business will be the reading of a paper, by Dr. P. H. Mason, on "Toning." (Applause.) [See page 43, last BULLETIN.]

Dr. MASON—I have several prints that were toned yesterday, and even by an artificial light, which is a severe test for comparing them, you can see anything from a warm, brown tone clear down to the cold gray [producing prints]. (Applause.)

Mr. BEACH—Before we proceed any further with the discussion, I believe Dr. Janeway has a remark to make in regard to the Question Box matter, of which his committee has charge.

Dr. JANEWAY—*Mr. President:* In behalf of the Committee on the "Question Box," I will state that the committee desires the members of our society to send to either of the members of the committee, or to myself, any question which they may deem worthy of an answer, or which they may desire to have solved. The committee propose, after the submission of these questions to them, to take them into consideration, and those that they think require or justify discussion, they will request some member or members among the older and experienced members of the society to give their views upon them. The questions, as I said before, can be sent to either member of the committee or to myself, or placed in the Question Box here in the room, which I promise shall be opened once a week. The committee also desire that the President will fix a time, giving us at least half an hour at every meeting, for discussion of any question that may come up, or to answer any question which may be presented to the committee for solution. (Applause.)

Mr. BEACH—At our last meeting here we commenced on a series of questions in regard to "Printing and Toning," and proceeded in our discussions as far as "The Silver Bath," and that is the question which we will take up now. I should like to get the experience of any of the members as to what, in their estimation, is the best strength and form of the silver printing bath.

Mr. PARSELL—If it is not out of order, Mr. President, I move a vote of thanks to Dr. Mason for his very interesting paper which he has just read.

[Motion seconded and carried.]

Mr. BEACH—Now, is there any one here

that would like to give their experience in reference to the printing bath; if so, I should like to hear them, and if not, we will go on with the next question. I may state, for the benefit of those members who were not here at the last meeting, that I had a series of questions drawn up and propounded to a professional photographer, and among them was this question, as to what, in his estimation, was the best silver bath.

(To be continued.)

## Found in the Editor's Box.

MR. J. STANLEY JOYCE'S JOKE.

"I see a man drivin' a wagon down South Fifth avenue dis yere morning, when a shutter flew off ob a buildin' and knocked de wagon speechless."

*Interlocutor.*—"Oh, no, you don't mean the wagon. You mean that the shutter knocked the driver of the wagon speechless. You couldn't knock a wagon speechless."

"Dat's whar you's wrong. Dis yere shutter jis flew off de building, and didn't touch the drivah nowhar. I seen it knock de wagon speechless. I knows what I sees, I reckon—'deed I does."

*Interlocutor.*—"But it's impossible to knock a wagon speechless."

"Well, it knocked de tongue out ob de wagon. I seen it do it. And de shutter war tried for it in de court."

*Interlocutor.*—"What did they do with the shutter in the court?"

"Dey hung it—dat's what dey done wid it."

*Interlocutor.*—"What for?"

"Jis for a blind."

## What Our Friends Would Like to Know.

*N.B.*—We cannot undertake to answer communications of a technical character except through the columns of the BULLETIN. Correspondents will please remember.

*Q.*—J. C. B. writes:—Will you please inform me through the columns of your magazine, where I can find complete directions for making window transparencies? I have seen short articles on the subject, but none that gave sufficient information for me to begin making them.

A.—You will find full directions given with the packages of plates sold specially for making transparencies. Such plates are for sale by our publishers. The directions are too long to reprint in these columns.

Q.—E. O. D. writes :—Will you inform me through your BULLETIN how to imitate falling snow on a picture?

A.—Spatter the negative with india ink, rubbed up with thin negative varnish. If done carefully, this will give the desired effect.

Q.—J. S. W. sends a green tinted print and asks :—How can I remedy this green tone? I have made several, and all are like this. Made all solutions carefully, according to formula.

A.—The print looks a little like copper in your sensitizing bath. Perhaps some coal gas may have acted on the paper during drying. See that your gas fixtures do not leak, if you use gas. It is almost impossible to say just what the trouble is, unless we know the circumstances.

Q.—E. J. F. writes :—Is there any way of removing the blemishes produced by hypo stains in negatives?

A.—We do not know of any way of removing hypo stains from negatives or prints, without at the same time destroying the picture.

Q.—H. F. C. writes :—Can as rapid gelatin emulsion be made by the cold emulsification process as by boiling? And how is the greatest rapidity obtained by the cold emulsification process?

A.—The old process will never give as rapid plates as the method of boiling. For details of making gelatin emulsions, we must refer you to Dr. Eder's book on "Modern Dry Plates," which is issued by our publishers. The details are too long to repeat here.

Q.—J. R. M. writes :—What is the best I can do with a tintype bath in which a ferrotype plate has been lying a long time, and has reduced considerable silver? Please give a description of Roche's new paper that needs no oiling.

A.—Perhaps you can make your bath good by boiling it down to a small bulk, filtering, and making up to strength with new silver; but we think it would be safest to precipitate with salt, and make a new bath. Roche's new paper is coated both sides with gelatin emulsion and is almost transparent; therefore it needs no oiling.

Q.—J. W. M. asks :—What will take fly-specks off old photographs without injuring them?

A.—Use weak alcohol on a piece of cotton.

Q.—A. W. N. asks :—What is the best developer for instantaneous work? I have tried several kinds, but none give me satisfaction. I use Cramer and Stanley plates.

A.—The developers given with the Cramer and Stanley plates are the best we know of. There must be some fault in timing your exposures.

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## Views Caught with the Drop Shutter.

THERE is quite a stir among photographers throughout the country as to who shall secure the exclusive right in their respective cities to make stamp photos, and HURLBERT BROS., of Studio Genelli, St. Louis, the owners of Patent 333,465, issued December 29, 1885, think they have quite a bonanza.

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J. N. MACDONALD, of Albany, has been compelled to seek larger quarters for his increasing trade.

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GEORGE MURPHY, the well-known New York stock dealer, has added a new floor to his store, devoted to photographic accessories.

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THE photographic gallery of Hugh J. Brady, Main and Park streets, Orange, N. J., was destroyed by fire lately.

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In the large fire in Philadelphia on January 25th, Mr. F. GUTEKUNST suffered a great loss. The loss of valuable negatives was very large, and while a small fraction of them remain, great numbers have been destroyed. We are glad to note that his phototype rooms were not injured, being two blocks off, and hope that the damage sustained will soon be repaired, although the loss of negatives is irreparable.

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IN the same fire Messrs. CROSSCUP & WEST, the well-known photo engravers by the Ives process, suffered a total loss, and we extend our sympathies to these gentlemen in their misfortune.

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MR. T. PATTISON, of Smith & Pattison, is slowly recovering from a most severe illness. We hope soon to see him around.—*The Eye*.



SWEET, WALLACH & Co. is a new firm of photographic stock dealers in Chicago. The senior partner was recently with N. C. Thayer & Co. and formerly with Douglass, Thompson & Co. The firm has retained the services of Mr. H. G. Thompson, formerly of Douglass, Thompson & Co., lately dissolved.

GAYTON A. DOUGLASS & Co.—Not one of our numerous readers will be surprised to see that a new firm of stock-dealers, under the title of the above firm, has been inaugurated since the dissolution of the firm in which the senior partner of the above firm was a prominent member. The firm of Gayton A. Douglass & Co. is a regularly chartered firm under the laws of this State. Mr. Douglass is too well known to require any comment from us. It gives us great pleasure to be able to announce that Mr. Douglass will not leave us. He has always been willing to aid all in his power every undertaking towards the advancement of photography.—*The Eye*.

WE note with regret that MR. T. S. BLESSING, of 87 Canal street, New Orleans, suffered considerable loss from fire lately. Later advices inform us that his photographic stock was not damaged, the loss being confined to pictures and frames.

WARREN A. TAYLOR, a photographer, is missing from his home, No. 493 Fulton street, Brooklyn. He came to Brooklyn from Philadelphia two months ago and hired rooms at the above address. He claimed to be the inventor of the ivorytype process, and had about \$500 worth of property stored in his rooms. He was a man about forty-five years of age, very quiet and simple in his ideas, and, in his as-

sistant's opinion, would fall an easy victim to sharpers.

MR. R. K. BONINE, of Tyrone, Pa., has the good opinions of his fellow-citizens on his photographic work. They say of him: "Mr. Bonine is young, active, energetic, attentive to business and courteous to his many patrons, and can always be found at his post. His work far exceeds any outside of New York and Philadelphia, and we think we give a true expression when we say it equals work done there." We wish him every success.

As we go to press we hear the sad news of the demise of our old friend, MR. DOUGLASS HOVEY, of the American Albumen Paper Co. Mr. Hovey died February 9th, and he leaves a large circle of friends to regret his decease.

N. C. THAYER & Co., Jackson street, Chicago, have just issued a very elegant book of specimens of designs for printing photographic cards. The work contains some seventy-five handsome original designs. The most fastidious photographer will be sure to find something in it that will please him. This firm claim to be the only one in Chicago in the photo stock business who really own a complete printing establishment for photographic card work.—*The Picture and Art Trade*.

WE note the issue of a very handsome new catalogue of photographic materials by our publishers, Messrs. E. & H. T. ANTHONY & Co. As a specimen of compiling it is excellent, and the cuts are uncommonly well done, while the typographical work is of the first order. Altogether this is the best catalogue we have seen lately.

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FROM NATURE

PHOTODUPLICATION Co. N.Y.





# ANTHONY'S Photographic Bulletin.

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Prof. CHARLES F. CHANDLER, Ph.D., LL.D., *Editor.*

ARTHUR H. ELLIOTT, Ph.D., F.C.S., *Associate Editor.*

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FEBRUARY 27, 1886.

Vol. XVII.—No. 4.

## ARTIFICIAL LIGHT FOR PHOTOGRAPHY.

SOME time ago a firm of prominent photographers consulted us in regard to the question of using the electric light to help them in printing in dull weather; and recently various experiments have been made to obtain negatives with artificial light. The question above referred to, and the results of the experiments in the latter case, have made us give this question of artificial illumination for photography a little study. The interesting experiments of Schumann, and the notes of our correspondent "Helios," in Germany, lead us to believe that we are on the road to independence of sunlight for photographic work other than landscapes.

Let us consider a little while the conditions necessary to produce a picture upon our present gelatino-bromide plates; that is, in relation to the source of light used. The majority of these plates are insensitive to yellow and red light, consequently objects reflecting these colors produce no chemical effect upon the plate. If we illuminate an object with yellow light we cannot, with our present plates, obtain a picture of it. On the other hand, if we illuminate it with blue light we can obtain a picture, but the light from the white or light colored parts acts so quickly upon the plate, that these give an impression before the shadows can begin to act. Such a negative will give a proof entirely lacking in detail, and where the high lights are painfully strong, the shadows patches of blackness, and entire absence of half-tones. This last state of affairs is what obtains when we use either the electric or the magnesium lights; and having seen pictures taken by both methods, we cannot recommend the use of either upon our present gelatine plates. We do not mean to say it is not practicable to obtain pictures with these lights, but it is difficult; and the best pictures we have seen are very inferior to those obtained in sunlight.

The reason that the electric and the magnesium lights are unsuitable for photographic illumination, is owing to the fact that each source of light contains an enormous predominance of the blue, violet and other actinic rays, and a corresponding deficiency of the other parts of the spectrum, and they do not give us correct pictures owing to the fact that our plates are too sensitive to the blue and other rays, and insensitive to red and yellow. Sunlight does not contain nearly as many blue and other actinic rays as either the electric or magnesium lights, hence, while our plates are manageable in solar light, they are unsuitable for use with either of the other sources of illumination mentioned above. But good pictures can be taken with other artificial sources of illumination, and

perhaps the most manageable of these is the lime light. Some time ago we saw a portrait taken by lime light by one of our well-known photographers that appeared to us to leave nothing to be desired in regard to its qualities as a picture. Just how the details of posing and lighting were managed, we do not now remember; but that good portraits can be taken with this source of illumination is beyond question. The time of exposure is necessarily longer than with sunlight, since the incandescent lime emits fewer actinic rays than the sun—that is, it contains more red and yellow rays. Nevertheless, this is the source of light that is best suited for use with the new orthochromatic plates now being studied in Europe. These plates are sensitive to the red and orange rays of light almost as much as to the blue and violet ones; hence a source of light containing red, orange and blue rays in about equal proportions should be best fitted for making pictures with these plates. These new plates are so sensitive to red and yellow rays that negatives can be made upon them by using petroleum lamps as sources of illumination; but these lamps have to be placed so near the object to be illuminated, that their use upon living models is out of the question. Large gas-lamps have been suggested, and, we believe, have been used; but with what success we are at present unable to say. The lime light is very readily managed, far more so than the electric; and—at least in cases where a little longer exposure is of no importance—can be used upon the present brands of gelatino-bromide plates. When orthochromatic plates are more readily made and used, we believe that this source of light will find much favor with photographers. We have penned the above thoughts upon this subject in the hope that some of our readers will experiment in the direction we have suggested and let us know their results.

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#### EDITORIAL NOTES.

At a meeting of the New York Academy of Sciences, Mr. George F. Kunz described a simple mode of making diagrams on gelatine plates to be used with the magic lantern. This process consists, first, in taking ordinary plates of glass, of the same size as the slide used by the operator, applying to one side a thin coating of black French varnish, which, when prepared with alcohol, will dry in five minutes, and then simply taking a pencil with a pin or needle-point and writing on the varnished side. The point will remove the varnish easily, and leave the whole series of diagrams distinctly traced in readiness for lantern use, the black varnish keeping out all the light except where erased by the pencil. Lists of figures and sketches which are usually shown on paper or the blackboard awkwardly, imperfectly, and with the loss to the audience of much valuable time, can in this way be prepared with great convenience. By simply recoating the plates that have been written upon, or, if preferred, dipping them in alcohol, the varnish can be removed and the slide prepared for use again.

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WE recently visited the exhibition of the Columbia College Amateur Photographic Society, and were very much interested in the development of the photographic art as shown in the pictures exhibited. In our next issue we shall give some of the impressions we obtained in our survey.

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WE would call the attention of our readers to the letter of our German corre-

spondent, "Helios," which appears in this issue of the BULLETIN. We have been at considerable expense to secure this correspondent, and can assure our readers that his letters will always prove interesting, and keep them *au fait* with German photographic advances.

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WE have to thank the Hartford Camera Club for a kind invitation to their first annual exhibition, held February 26th and 27th.

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WE have recently used a device which adds considerably to our comfort while developing. This is a pair of gauntlets that protect the cuffs and wristbands of the shirt sleeves from being stained with chemicals. We saw them at the store of our publishers, and as they appeared to be well suited to the purpose for which they were intended, and well made, we obtained a pair, and have used them with great comfort and satisfaction.

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MR. C. GENTILÉ, the able editor of *The Eye*, was in New York lately and gave us a call. As usual he had his eye open for all passing events.

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MR. JOSHUA SMITH was also in New York during the meeting of the Photographic Merchants' Board of Trade and obtained many valuable contributions to the Medal Fund of the Photographers' Association of America.

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By the way! Our readers must not forget to be ready with their exhibits for St. Louis. *Local Secretary* BENECKE writes us that "applications for space are coming in thick," and urges all to send in everything *in time*, and to be in St. Louis in *propria personæ* on June 22d. Don't forget.

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#### OUR ILLUSTRATION.

OUR illustration is a photo-gravure from nature by the Photo-Gravure Company of New York. It is printed from a copper plate on which the picture has been engraved by photography, and is practically untouched by hand. The printing is done on an ordinary copper-plate press by the ordinary copper-plate method.

Every one is, or should be, familiar with the magnificent results produced by the photo-gravure process of Goupil. These results are unapproached, but are almost entirely confined to the reproductions of works of art, and their wonderful success may be due in a measure to the interest of the subject one is looking at, and in a measure to the high artistic skill with which the plates are finished after the photographic portion of the work is complete. It is not certain that the process is so successful with pure photographs from nature, of which but few examples appear.

On the other hand the process of the Photo-Gravure Company appears to lend itself naturally to the reproduction of pure photographs, and may therefore be said to be the process, *par excellence*, for this country.

Those who are interested would do well to see the results being produced by the Photo-Gravure Company of New York. While the work by this process retains all the *value* of the photograph, it seems to get entirely away *from* the pho-



tograph, and to have the character and force of a strong mezzotint engraving, with a certain character of its own, perceptible in no other method of printing.

The advantage, or rather the difference, between this and other methods of photo-mechanical printing are many. In collotype, or printing from gelatine, one must be satisfied with the result given by the negative. In photo-gravure, on the other hand, after this point has been reached, a great deal may be done to the plate. Values may be given where they do not exist in the negative; lights may be lightened, shadows deepened; even new work may be added and undesirable work may be obliterated, and when once a final satisfactory result is reached, that result is retained for good. Again, an edition may be printed from a plate, and the plate stored for future use with the certainty of obtaining similar results, without the uncertainty of dependence on light. The plates are not so liable to damage as collotype plates, and they may be printed in any plate printing-office. On the other hand, their preparation is more costly and occupies far longer time than the preparation of collotype plates. For many subjects, prints from gelatine are preferable, having a softness and effect unlike the results of other methods. As compared with photo-lithographs or photo-engravings, these latter processes, only suited, it is true, to a limited class of subjects, are infinitely quicker and cheaper, and they can be worked on steam-presses, a result not likely to be obtained with the copper-plate method. On the whole, it is a self-evident proposition that every method of photo-mechanical printing has its own sphere of usefulness, and this latest method supplements, but does not supplant, any of them.

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### THE MAGIC LANTERN AND ITS APPLICATIONS.

BY L. H. LAUDY, PH. D.

(Continued.)

*Holders or Carriers*, the design of which is to bring the picture in the center of the condenser. This would not be a difficult matter if the pictures were of a uniform size, and it is to be regretted that producers have not agreed upon a definite standard size. The result is that we have several arbitrary sizes. The only one that approaches to a general adoption, and is known as the trade size, is  $3\frac{1}{4} \times 4$ . The others are  $3\frac{1}{4} \times 4\frac{1}{4}$ ,  $3\frac{1}{4}$  square,  $3\frac{3}{8} \times 3\frac{1}{4}$ ,  $3\frac{7}{8} \times 3\frac{1}{4}$ , and  $4\frac{1}{4} \times 5\frac{1}{2}$ , and some are to be found  $6\frac{1}{2} \times 8\frac{1}{2}$ . Those mounted in wooden carriers measure 7 inches long, 4 inches wide,  $\frac{3}{8}$ -inch thick, with an opening of 3 inches. The ordinary carriers, made of metal, answer for the regular sizes. For the others an adjustable holder is made on the principle of the parallel ruler, which by a lever can be enlarged or reduced to take all sizes used for the lantern.

The holder—placed with the opening in the center of the condenser—should be long enough to hold several pictures at a time, and have notches in it to indicate the central position of the picture.

Having briefly discussed the optical and mechanical portions of the lantern, it will be well at this point to mention a few of the many curious names given to lanterns, and then consider some of the details of construction of the more important ones.

I will endeavor to be as concise as possible in describing the parts, so that the reader may have a general knowledge of the construction of the different kinds.

## NAMES OF LANTERNS.

Magic Lantern.  
 Stereopticon (to see solid) or Dissolving Lantern.  
 Phantasmagoria. Ghost-like.  
 Sciopticon. Shadow to see.  
 Triplexicon. Three wicks.  
 Dioptric. Refraction.  
 Binoptric. Prismatic lantern.  
 Trinoptric. Three lanterns in one.  
 Biunials or Doublets. One over the other.  
 Triplet or Triunial. Three-stories high.  
 Pamphengos. Bright light.  
 Aphengoscope. Without light.  
 Polyopticon. Many to see.  
 Megascopie. Great to view.  
 Euphaneron. Abundantly visible. Has four wicks.  
 Pantaphane. Five-light. Has five wicks.  
 Solgraph Cyclexicon. To write comprehensive.  
 Photogenic. Light-producing.

*Stereopticon or Dissolving Lantern.*—This involves the use of two lanterns, which are so arranged that the illuminated circles shall exactly register (coincide) on the screen. It was supposed that a stereoscopic effect could in this way be produced, and was at first held a great secret, until the fact was made known that only one picture was used at a time, making it impossible to yield such an effect. Hence the name stereopticon is a misnomer; it should be called a dissolving lantern.

This method of projection is now used at all first-class exhibitions, and, when properly manipulated, produces a very pleasing and striking effect. Several devices can be used, the aim of which in all cases is to produce a gradual diminution of the light until the picture disappears, and by a gradual increase of light reappears.

Dissolving effects can be produced by a single lantern, and they are thus spoken of as double or single dissolvers.

When produced by a single lantern, the gradation of the light is produced by means of an elongated conical opening cut in a wood or metal strip, which is placed in front of the objective and is made to move across the aperture of the lens, which will so modify the light as to produce fairly good results. (See Fig. 7.) The same opening can be used on two lanterns if necessary, and acts well when the source of light is refined petroleum.

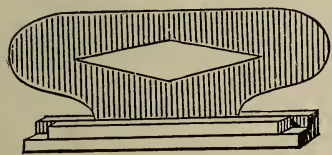


FIG. 7.

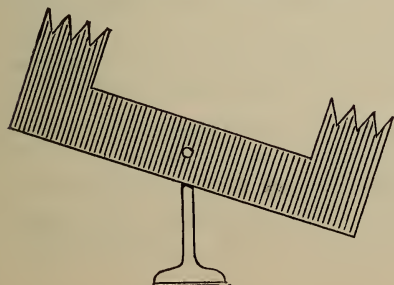


FIG. 8.

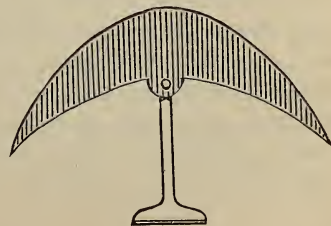


FIG. 9.

Another form of dissolver is a serrated plate, which is likewise used in front of the objective. (See Fig. 8.) Another method consists in using a crescent-shaped opening, which is so arranged that as the picture is moving in place the aperture will be closed, and as the picture takes its central position in front of the condensers, the crescent-shaped opening will so expand as to allow the light to pass and illuminate the screen. (See Fig. 9.)

These methods fail to give results as pleasing as those to be described, and which are produced by regulating the flow of the gases by means of a "dissolving key." These keys are divided into high and low-pressure dissolvers. The low-pressure keys are more simple in construction, but require that the adjustment of the gas be made either at the bags or cylinders, and need constant attention. The construction of the key is such that a certain amount of hydrogen shall remain burning in one lantern, while the full supply both of oxygen and hydrogen shall be delivered to the lantern projecting the picture, and then reversing the operation. This is effected by using a slightly tapering plug, in the side of which grooves are carefully cut, so that by moving it around its center the flow of the gas can be directed wholly or in part to either lantern.

Many devices have from time to time appeared, all of which involve the above principle in construction. It was found that the above worked well when the gases were not under very great pressure, as that produced by pressure boards on gas bags. Since the introduction of compressed gases in cylinders, it required a key that would be able to receive the full pressure of 225 pounds to the square inch; hence the term "high-pressure key." The principle of construction is the same as in the low-pressure key, yet it requires more mechanical skill, as the channels through which the gas enters at a high pressure deliver it to the jet at a low pressure; for this purpose additional grooves have to be cut in the tapering plug. The plug must fit tight enough to prevent the gas leaking and yet admit of being easily moved in its socket without lubrication. The first successful key made was by Mr. A. G. Buzby from gun-metal and sold by the publishers of the *BULLETIN*. Several excellent keys are now to be had which have been tried by the author, and which work satisfactory under all tests. Many of the keys have the objectionable feature of blowing out the hydrogen, and snapping or failing to deliver the proper supply of oxygen, which reduces the intensity of the light. A properly constructed key should be free from these defects, and when used they have the great advantage that the gases can be turned on at the cylinders under full pressure, and all the regulating done at the key by the operator. It requires considerable practice, even with a perfect key, to produce fine results, as a good key in the hands of inexperienced persons might result in failure.

These high-pressure keys are constructed with a double central plug, and four small ones, the latter receiving the direct high pressure from the cylinders and delivering to the central plug at low pressure; while others depend upon one long central plug which enters two chambers, thus dividing the key into two separate parts. With either of these keys the gas can be so regulated that what difference there may be in the size of the opening in the jet, the light can be made of equal intensity in each lantern, which is one of the great difficulties to overcome without constant attention on the part of the operator when using a single central plug dissolver. In keys constructed on this principle the high



pressure from the cylinders comes in contact with four plugs or stopcocks, and in turn is delivered to the central plug at low pressure, from which it is delivered to the jets; they are, therefore, high and low-pressure keys in one.

It would hardly interest the reader to go into the details of construction of each named lantern, as what is said about one applies to all in general construction, and they only differ in size, weight, and material. In all cases it is of the utmost importance that the fundamental points mentioned—the light, condensers, and objectives—should be selected of good material and workmanship.

The condenser lenses should be free from striæ, air-bubbles, scratches, and of a uniform light bluish color, and be so mounted in brass that they can be easily unscrewed and cleaned. The objectives best suited for projection are those that give a flat field free from central flare, and should give a well defined image, as the chief merit or excellence of a representative image consists in its distinctness or clearness. For what is more painful to the eye than a picture half-effaced or blurred, the result of an imperfectly constructed objective; or, at times, the fault of the operator in not properly focusing.

The jet should come in for some little consideration, as its faults are made manifest by a whistling, buzzing, hissing, disagreeable, and, to say the least, an annoying sound. Such a jet should at once be discarded, as these faults are in construction and can be overcome by making the opening smooth and not too large. The best constructed jet can be made to fall into the above bad habits if too great a pressure is forced upon it.

(*To be continued.*)

## GOOD PHOTOGRAPHS NOT ALWAYS GOOD PORTRAITS.

BY "KINCAID."

I REMEMBER reading, some years ago, that a certain metropolitan photographer had made up a show of pictures, all of which had been rejected by the originals as not good, yet with them he obtained several prize medals for superior work. I remember it was considered absolute proof of the captious and unreasonable demands of the public, and I then so considered it.

But my experience since somewhat shakes my faith in that evidence, and I think all photographers who deserve the name of artists have come to recognize that a technically good photograph is not necessarily a good likeness.

Yet a great many still act upon the presumption that good photography and good portraits necessarily mean the same thing.

They show a photograph and say, "Is not that good?" and get impatient when a cautious observer says, "It's a good picture—but I don't know about the likeness; seems to me it ain't exactly like him."

Whereupon the photographer impatiently exclaims, "Like him? Why, ain't it bright, and sharp, and clean? How can it help being like him?"

"Well, I dunno; seems to me 'tain't;" and the photographer thinks how unreasonable the people are, and I used to think so too; but I have gradually come to believe that the common people, whose judgments have not been biased by *wrong education*, know better and judge more accurately than photographers, whose artistic insights and judgments have not been cleared and enlightened by *right education*.

Two marked examples which have recently come under my observation have awakened my attention on this point and emphasized my opinion.

The first was a cabinet of a middle-aged gentleman—a hearty, generous, good-natured, honorable gentleman; yet in the photograph he had a sullen, vindictive, villainous look that would have seemed to any stranger perfectly in character if told it was the likeness of a robber or a murderer. Yet it was a good photograph, made in a fine gallery on the principal street of a large city, and given out as a likeness of the good-looking gentleman whom it grievously belied. They were taken in a distant city and forwarded to him, or they would not have been accepted.

The other was a cabinet of a young lady, only seventeen, well retouched and well finished, but so lighted as to make the fair features of youth so strongly marked and so mature that she looked like a woman of thirty.

The picture was beautiful in itself, but not a correct portrait of the lady.

And I think there is a great deal of work made open to similar objections, if photographic portraits are to give some idea of the character and spirit of the person portrayed; and people who find fault on such grounds are not so unreasonable as photographers sometimes think.

If a pliant, graceful form is made to look stiff and awkward; if a person of brave and generous spirit is made to look mean and cringing; if a mild and gentle nature is made to look supercilious and bombastic; if a grave and reverend minister or professor is made to look like a gay and festive actor, or *vice versa*, there is something wrong which good portraiture should look after and at least endeavor to make right. But do photographers generally give much thought in that direction? Do they often reject a good, bright, sharp, clean negative because it thus misrepresents the original? They often have to make them over on such grounds; but do they not generally do it under protest, thinking the parties unreasonable and exacting? Making photographs is a mechanical employment, which, nowadays, can be acquired by any person of ordinary intelligence in a few months' time; but making portraits by photography, showing something of individual character and personality beyond the mere bodily form, is an art in which natural artistic ability, trained and educated to the fullest extent, will still find scope for all its powers.

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The communication of our correspondent "Kincaid" touches upon a point of considerable importance, and the principle enumerated is one upon which we know many of our best photographers act, that a photograph is not necessarily a "good likeness" because it is a clear and sharp *fac-simile* of what was before the camera.

The interesting experience of another correspondent (see next page) will show that many people desire "a proper expression," even on a photograph of a favorite animal.

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I SEE by the last number you have seen fit to advance the price; well, all I have to say is, I can stand it, as you have not got the figures up to its par value yet. I only wonder how you can collect so much valuable reading for such a small amount of money.

P. ERSLEY.

# "UN MAUVAIS QUART D'HEURE."

BY CLIFTON CLIFF.

ONE of the most exciting incidents in my photographic career occurred about a month ago. I may here remark that it did not turn my hair gray, though it might have done so had I been of a more nervous temperament. I had been busy, very busy, all the morning, and had just managed to devour "a sausage and a bitter," when I was told that a gentleman wished to see me. I went and interviewed that gentleman, and found that he was accompanied by a friend (I nearly left out the r) in the shape of a more than ordinarily ferocious-looking specimen of that generally ferocious looking breed of dogs known as bull. When I entered the reception room, he glanced at me and showed his grinders. Then he smelt round about my boots as though he was making up his mind which leg to bite first. His master stated that he required a photograph taken of his pet, and that what he specially desired was a picture which should show off all his good points (I suppose he meant his teeth).

"You see," said he, "Vulcan is rather a famous dog; he has already taken several prizes, and will, I hope, take many more. I have repeatedly had him photographed, but never yet got a satisfactory picture. In nearly all of them he looks as mild as buttermilk, and that sort of expression don't suit him. I believe you take dogs instantaneously; so I think if I tantalize him and wake him up a bit just as you are ready, we shall be able to achieve a success."

I mildly asked if it would not be rather a dangerous proceeding.

"Not in the least," he replied, "Vulcan always obeys me, and I shall not let him do any harm to you."

With a queer sinking sensation beneath my waistcoat, I showed the two friends to the gallery, and retired to my sanctum sanctorum to put in a plate. When I again entered the studio I found that my sitter had been amusing himself meanwhile by tearing a fur rug to pieces. The angry passions commenced to rise, but I suppressed them, mentally calculating, during the process, how much expense I could charge for damages.

Having made up my mind on that point, I asked the owner of the dog to get him on the table, which I had just prepared for his reception. When he had got him on I commenced to focus. No sooner was my head beneath the cloth, than an ominous growl caused me to look up again. There was Vulcan snarling, showing his teeth, and looking most terrible in his endeavors to break away from his master, who was holding him back by the collar.

"Can you keep him there all right?" I asked.

"Not unless you can do without that black cloth," was the reply.

I threw it in a corner and proceeded to focus without. Then I put in the slide, withdrew the shutter, and prepared to expose.

"Scats! scats!" cried the owner of the dog, and before you could say Jack Robinson, he was off that table and the focusing cloth was bidding fair to become as fragmentary as the fur rug. I advanced, intending to drag away the cloth, and his master did the same. With another growl he left it, and made for me. In an instant the owner had him by the collar again, but in another instant he hadn't, but went with a crash through a new 9 x 8 Empire cloth background, while Vulcan all but seized me; as it was, he added a portion of my coat-tails



to the litter that was beginning to accumulate. I made for the door, but he was before me. I turned and rushed behind another background, and, as he came behind me, I found the other side blocked, so had to go *through* to escape him.

By this time the other biped had regained the perpendicular, and tried once more to capture the animal; but Vulcan ran between his legs, and he was floored once more, carrying camera and lens with him in his fall. There was a crash of broken glass, which made me feel reckless, and I commenced seizing whatever came to hand, and hurling it at that dog. It is true that one small bottle went through the studio window, and that another went with some resistance against the cranium of Vulcan's master. But what cared I for broken windows or other people's skulls, so long as that brute's teeth did not unite in some portion of my anatomy. His master again arose from the ruins, and no sooner had he done so than a portion of his trousers, from the part he usually sat down upon, went to find the tail of my coat. Then might have been heard, softly borne on the air, the sound of "a big, big D," as that man with both hands seized hold of an unopened Winchester of liquid ammonia and hurled it full force at the head of his pet. I am sorry to say it didn't hit him, but it did hit something else, viz., a twenty-guinea pier-glass, which stood close by. The crash of broken pier-glass and broken ammonia bottle was sickening, but the aroma which immediately filled the gallery was not. In less time than it takes to write it, the two of us were out of the studio and in the reception room, trying to open our eyes and endeavoring to get rid of that dreadfully nasty sensation in our throats.

As for Vulcan, we were too much occupied to think of him. At length, being partially recovered, his master dashed upstairs, and found his darling lying just inside the gallery door quite dead, suffocated with the fumes. I felt so sorry, that I nearly shouted hurrah!

Then Mr. Thingummy turned to me—"This is a bad affair," said he.

"I rayther think it is," said I.

"What is to be done?" he queried.

"You must pay me for the damage," I returned.

"See you blowed first" (he used a stronger verb, though).

In anger and desperation I raised my fist, and—awoke to find that pork sausages are terribly bad things to eat for supper.

## NEWS FROM GERMANY AND AUSTRIA.

*Isochromatic Photography in Gaslight—Preliminary Baths for Dry Plate Development—The so-called Excelsior—A New Curious Method of Making Emulsion of High Sensitiveness in the Cold.*

New inventions in photography are made almost daily, and announced by the journals with more or less enthusiasm. Thus there was a good deal of talk in Berlin about a great invention of Mr. Schumann, in Leipzig. He is said to have succeeded in preparing isochromatic plates which, in regard to sensitiveness, surpass everything heretofore known. They are said to permit even photographing by gaslight. Mr. Schumann, after having received a diploma of honor from the Berlin Photographic Society, then publishes the invention, eagerly waited for, but the expectations were materially reduced by his announcement that he re-

quired five minutes to take a color table with petroleum light, while he admitted that with Vogel's azaline plates, such a negative could be taken in fifteen seconds.

This would close out the celebrated high sensitiveness. Besides this, the plates produced by Schumann by bathing them in a cyanin solution, showed great tendency to fog and very little durability. Still it has been the means of some good; it has drawn attention again to photography by gaslight, having proved practically the not uninteresting fact, that while ordinary emulsion plates are more sensitive in daylight than isochromatic plates, the thing is just reversed by gaslight. Here the latter show, therefore, greater sensitiveness.

Now you may say that nobody will photograph by gaslight as long as sunlight is at his disposition. I admit that. America has the least cause for the use of artificial light, for the beautiful blue American sky is well known on this side of the Atlantic.

But these pictures taken by gaslight have one advantage; they give, *without yellow glass*, upon isochromatic plates, negatives in their *proper color proportions*, the blue, dark and the yellow light; and this is not only of importance for colored paintings, but also for portraiture. Dr. Vogel's experiments have demonstrated that portraits taken by gaslight show more harmony than those taken in daylight; that yellow spots, like freckles, etc., will leave a much less prominent mark; and that light hair will actually be light, so that, indeed, it requires hardly a third of the time to retouch such a negative than one taken in daylight.

Now the question arises, what means have we at service to take portraits by gaslight? Dr. Vogel took with two gas flames of 18-candles strength, a color table upon azaline plates in twelve seconds; but the distance of the gas flame from the color table was only 20 c.m. (7 inches), and a living model we cannot bring so near to the gas flame; but fortunately there are strong gas burners equal in strength to 120, 300 and 1,000 candles.

Of course it must be considered, that with the increase of strength of light of these burners, the light will also suffer a change. It becomes bluer, and is, therefore, less suitable for isochromatic purposes. Still this can be overcome by putting a yellow chimney over the flame, thus giving the light a more yellow tone. About the progress upon this field, I shall report to you at a later time.

In Germany and Austria the oxalate of iron developer is used almost exclusively, as is well known. Germany manufactures the largest quantity of pyrogalllic acid, but most of it is used abroad. In connection with the iron developer, so-called preliminary baths as accelerators have been recommended for a good while; as, for instance, a hypo solution 1 to 5,000. The fact is that this has a very advantageous effect, as the image appears at once with all its details—but only with the iron oxalate developer—strengthens in the developer very evenly; and a much softer and more harmonious negative is obtained than without a preliminary bath. It has been said that the preliminary bath increased the sensitiveness, but this is not correct. It is nothing but an illusion or incorrectly applied experiment. If two evenly exposed plates—one with and the other without the preliminary bath—are developed in the same developer, and the development is interrupted at the same time with both, the plate with preliminary bath will show much more detail than the other; but if the second plate is left a longer time in the developer, it will gain gradually in detail, and will have, finally, just as much as the other.

Lately new substances have been discovered here which have a similar action to the hypo in the preliminary bath; for instance, the coloring matter called chrysanilin. It is applied in very diluted solutions, 1 to 20,000, and has the advantage of not causing any fog.

Another matter is now introduced into the market called Excelsior, which, according to Eder, is nothing but hydrosulphite of sodium with a little ammonia, which was used by Samman already in 1877. Dr. Eder says about this same:

Hydrosulphite of soda preserves the action of the oxalate developer a little longer when exposed to the air. In the alkaline pyro developer it acts in about the same manner as sulphite of soda; keeps the pictures clear, even by extended development; and permits us, therefore, to obtain pictures of great softness and extremest intensity.

The accelerator "Excelsior" is therefore, in pyro development of good service, which is not the case in the same degree with the oxalate developer. The Excelsior for pyro development owes its effect to the hydrosulphite of soda with a little ammonia. The ammonia increases the preservative power of the hydrosulphite, and is a good accelerator for the soda developer.

It is known that a trace of ammonia in the soda developer accelerates the development and gives to the picture a quicker intensity.

The hydrosulphite retards the ammonia yellow fog, which some plates are subject to with the ammoniacal soda developer, without addition of bromide, and gives more brilliancy to the picture. Excelsior acts well for the soda developer, but has almost no effect in the ammonia sulphite developer.

The hydrosulphite of soda, which is produced by digesting bisulphite of soda with zinc dust, does not, unfortunately, keep well when exposed to the air, and this may have given reason to contradictory results about this substance.

Recently, confidential mention is made about a process to make a very sensitive emulsion in the cold and without any alcohol. The past methods, particularly Obernetter's and Henderson's, require, as is known, alcohol. Professor Eder now communicates to me a process deviating from all former ones, and offering many new features. The process originates from Plener, who has gained reputation by his method of separating bromide of silver from the gelatine by centrifugal force, and afterwards emulsionizing with fresh gelatine. It is said that this method has been already applied secretly for a long while.

Dr. Eder describes it as follows:

I. 50 grams nitrate of silver are dissolved in 250 c.c. of water, and ammonia is added until the precipitate dissolves.

II. 40 grams bromide ammonium and 1 to 1½ grams iodide of potassium in 250 c.c. of water.

III. 50 grams hard Winterthur gelatine are soaked in water from one to two hours. The superfluous water is poured off, and it is then cooked in the water bath.

IV. 25 grams Coignet gelatine (gold medal) are soaked in water, cooked, and mixed with 25 c.c. ammonia immediately before use.

For the production of the emulsion, Mr. Plener places great value upon a high narrow flask or bottle, to make the foam rise high while shaking. To the cold solution II, is next added about the sixth part of the heated gelatine solution



III, and well shaken. A strong foam has to form to fill the whole bottle. The colder the solution, so much less gelatine is required for a strong foam formation; but the solution must not be so cold that the gelatine coagulates, which can be recognized in the foam formation after a little practice. The silver solution is now added cold in a thin stream by means of a wash-bottle, and under violent shaking. It can be felt, while shaking, that the gelatine thickens, resulting from refrigeration. *Immediately after mixing* of the silver solution, the bottle is plunged into water of  $35^{\circ}$  C. for a few moments; the rest of solution III (heated to  $35^{\circ}$  C.) is then immediately added, and digested for half an hour at  $35^{\circ}$  C. in a water bath under repeated shaking. Solution IV is now added, and digested for another quarter hour; then it is poured into a covered glass dish to a height of about 2 to 3 c.m. and left to congeal.

I have given you this description in the original, the exact observation of this somewhat peculiar process being of importance.

After the emulsion has become rigid, it is left in a vessel or box for six days to ripen at about  $10^{\circ}$  C. An enormous sensitiveness can be obtained by long standing before washing. The colder the gelatine while being mixed, the more *free from fog* will be the emulsion. The pyro developer seems to act better with this emulsion than the iron developer. Eder says that the sensitiveness of this emulsion increases from ten to twenty times by ripening. It is said even that the emulsion would show  $30^{\circ}$  Warnerke, and necessitated an extended Warnerke photometer.

HELIOS.

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### READY SENSITIZED PAPER.

BY GARVEY DONALDSON.

IN using this paper but few will go to the trouble of fuming it, without which the best results cannot be obtained. It should be fumed about twice as long as freshly-prepared paper, or until it prints a rich purple color. This requires from thirty to sixty minutes. To secure the dark purple tone so much sought after, it is necessary to print considerably darker than usual, as the prolonged action of the toning bath required to reach this tone bleaches the prints very much, and as we practice and recommend a strong fixing to secure permanency, it makes it all the more necessary that the prints should be quite dark. Beginners often complain that only brown tones can be made with this paper. If the above instructions are followed, and enough gold used, any tone desired, except black, can be made just as readily as with paper prepared the same day it is printed.

Acting upon the idea that one grain of gold chloride will tone one sheet of paper, it is a good plan to make up the toning bath of say sixteen ounces soft water and one grain gold chloride, which is tested with blue litmus paper for acidity, and enough of either carbonate, bicarbonate, or any of the sodas used for neutralizing added, to restore the blue color to the litmus paper; then add a few grains of chloride of sodium, and the bath is ready for use. If the prints do not begin to change color in less than ten minutes, add one-half grain of gold, which, of course, is supposed to be in solution, always testing with the litmus, and neutralizing, if required, after adding it. Enough gold should be used to tone the prints in fourteen to twenty minutes; and a good rule to use in judging when they are toned is to continue the toning until the print is of the color

you wish it to be when finished. For the first four minutes after being placed in the fixing bath they will redden somewhat, but will come back to about the same color as when removed from the toning bath. Fix for fifteen minutes, at least, and keep the prints in motion by turning them over repeatedly, beginning with the bottom ones and so on.

Many failures come from neglect to give the prints the necessary attention during fixing.

The washing should be thorough, to free the prints from the least trace of hypo. By giving every operation close attention, the beginner can soon produce good prints.

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## A NEW MAGNESIUM LIGHT.

BY F. C. BEACH.

[Read before the Society of Amateur Photographers of New York.]

PICTURES can now be so easily made by the aid of artificial light upon the present extremely rapid dry plates, that it is only a question of a short time when the active professional photographer will make it a part of his business to photograph theatre and opera scenes, ball-rooms and their occupants, banquets, etc.

Perhaps the proper management of an artificial light has yet to be learned; but it is certain that good pictures can be made, if care is taken. The light obtained by burning magnesium possesses more actinic power for a given amount of material than any other substance, and is said to be superior in this respect to the arc electric light. For this reason, as a comparatively short exposure is required, it affords a ready means for taking pictures at night.

The simplest experiment in taking a picture with magnesium that I have seen, was the photographing of a dinner party of some twelve persons, in a room of about 15 by 20 feet. The camera was located in the doorway, about ten feet from the table, and a waiter stood upon a chair, four feet to one side of the camera, holding as high as he could conveniently by a pair of pinchers, a strip of magnesium ribbon eighteen or twenty inches long. With a match the lower end of the ribbon was lighted, and the exposure made simultaneously, the burning of the magnesium lasting about eight seconds. A Ross rapid symmetrical lens with full opening was employed. A crisp, brilliant negative, fully exposed, was obtained, and the experiment proved to be a complete success.

I have cited this circumstance with a view of conveying to you the proper proportion of magnesium to use for a given area. As the power of any artificial light diminishes according to the square of the distance it is from the object, it follows, that in a larger room considerable more magnesium must be consumed to produce a good effect. If this larger quantity be burned at one point, the exposure required will be too long, particularly if portraits are to be taken—such for instance as a large hall, filled with a crowd of people—hence it is better to divide the quantity into two or three parts, distribute judiciously, and burn rapidly.

Those of you who know anything about the uncertainty attending the igniting of two or three magnesium tapers simultaneously, can appreciate the difficulty necessary to be overcome, and it was this problem which addressed itself to me.

How to ignite three or four independent magnesium tapers at once, which were distributed about in different parts of a room, by the act of one individual, was the question.

From some suggestions contained in a recent number of the *British Journal of Photography*, I learned that by burning magnesium in a large glass flask filled with oxygen gas, a most brilliant actinic light could be obtained, softened and diffused by the confined cloud of magnesian oxide given off.

It then occurred to me that it would be possible to arrange some special means by which the magnesium could be simultaneously ignited and also be burned in a continuous supply of oxygen. The result of my study will be shown by the experiment we will soon undertake.

You will notice upon the blackboard the arrangement of the apparatus. Near the ceiling of the room are suspended two tin boxes about fourteen inches square by eight inches deep, the front or open side being closed by a pane of glass slid in suitable grooves, so that it may be raised to permit access to the interior. Near the upper end of the interior of the box is a small spring clasp, similar to a garter clasp, which clamps and holds in place the strip of magnesium ribbon, the latter hanging vertically, and made long enough to come within half an inch of the top of a small piece of sponge (about as large as a small marble), which is saturated with alcohol and supported on a metal point projecting above the bottom of the interior of the box about half an inch. Running directly under the sponge, and in contact therewith between two insulated brass binding posts an inch apart, is a fine piece of platinum wire, No. 40 gauge. About five inches to one side of the sponge in the bottom is an inlet tube  $\frac{1}{4}$  inch in diameter, its inner opening being covered by a disk one inch in diameter, to distribute or diffuse the entrance of the gas. Below, near the camera, is located an iron cylinder filled with oxygen gas under pressure, such as is used for the lime light, connected by a rubber pipe to a T-joint, and from this to both the magnesium light boxes at their inlet tubes just described.

From the binding posts on the exterior of the boxes, electric wires run to a battery placed at any convenient point, and in the circuit near the operator is an ordinary telegraph key.

Supposing we are now ready to operate. The man at the camera first opens the valve of the oxygen cylinder, thereby immediately charging the boxes with gas; a small quantity will continually leak out at the top, but is of no consequence. Immediately he notifies his audience to remain quiet, and with one finger presses the key. Instantly the platinum wires under the sponges are heated to a cherry red by the electricity, which, by igniting the alcohol on them, at once sets on fire the magnesium tapers hanging above. We then have two brilliant lights burning simultaneously. With the other hand the operator at the same moment makes the exposure in the usual way. He then shuts off the gas and the work is done. Care in development should yield him a good negative.

The same igniting arrangement will work just as well without the admixture of oxygen gas, but in such case it will be better to withdraw the pane of glass, in order to allow the smoke to escape from the box. Magnesium burns much faster and more freely in oxygen gas than in the air; hence the light, though seemingly short, is sufficient to make a good image.

Arranged near one end of the room to-night you will notice two tin boxes



near each other, about the size previously described—one, however, being somewhat smaller—suspended about eight inches below the ceiling from a horizontal wire running crosswise from a projecting gas-pipe in the ceiling to a fixture in the side wall. Both are hung in such a way as to throw the magnesium light at an angle of  $45^{\circ}$  upon the audience below, and located as far forward as will prevent them from being included in the upward angle of view of the lens, which you will observe is sufficiently large to take an 8 x 10 picture.

*(To be continued.)*

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### THE IMPROVED AMERICAN PERMANENT BROMIDE PAPER.

BY F. C. BEACH.

[Read before the Society of Amateur Photographers of New York.]

It gives me pleasure this evening to call your attention to the marked improvement which has been made in this country, within the past year, in the manufacture of gelatino-bromide paper. So great has it been, that a comparatively new industry is being built up—a new revolution in photography in fact taking place. This I attribute to the stimulating influence of our American patent system, tending, as it does, to bring about the perfection and improvement of all processes and apparatus pertaining to photography.

There are doubtless many of you who are perfectly familiar with the method of enlarging by ordinary lamp-light on the gelatino-bromide paper; but I feel safe in saying what little experience a few of you have had, it was far from being satisfactory.

So many have answered me in reply to the question, “If they had ever tried enlarging on bromide paper?” “Yes, I tried it once, but the paper would fog, or was full of streaks and pin-holes, or the whites were so muddy that I had to give it up; in fact I was disgusted with it.” I concluded it would be some time before these disappointed experimentalists would want to touch the paper again. So I wish to address my remarks to them, and to several of our younger members who never saw an enlargement upon or never knew the advantages to be derived from the use of this excellent paper.

The paper we shall employ this evening is that recently introduced by the Eastman Dry Plate & Film Company, of Rochester, N. Y., and called Permanent Bromide Paper. It is prepared by special machinery in large continuous rolls, and is therefore very evenly coated, a point of much importance, since it has heretofore been almost impossible to obtain hand-coated paper that was uniformly reliable. Furthermore it has been ascertained, the smaller the percentage of gelatine is that you mix with the bromide of silver, the richer and better will the resulting pictures be. The film must necessarily also be quite thin. By the use of special automatic coating machinery this is now easily accomplished.

Again, the sensitiveness of the emulsions for positive paper has heretofore been too great, frequently resulting in the loss of a picture by over-exposure, and making it difficult to develop, because of the faint light required. Now the manufacturers have hit upon a happy medium, by making the speed of the emulsion much slower. The results to be obtained are therefore correspondingly more certain and superior, in addition to which the worker can use with safety a flood of bright ruby and yellow light.

The paper will keep almost indefinitely; is always ready for use; and a positive print can be made upon it, dried and finished in far less time than is possible with albumenized paper. All the uncertainties of the silvering bath and toning are dispensed with—your picture comes right out, is fixed, washed, and finished in no time. The manipulation is extremely simple and cleanly. So quick can positive proofs be made by a common kerosene light, that I believe it will be but a short time before we shall see the practice started among some of our enterprising photographers of showing their sitters proofs from the negative or negatives before they leave the gallery.

The reason why I believe this, is that it is perfectly feasible to take a negative just out of the fixing bath, give it a slight wash or soaking in changing water for five minutes, harden the film with an alum bath, and then lay upon and in contact with the wet film a sheet of the bromide paper previously wetted, carefully smoothing out any air bells by passing the finger gently over the back of the paper. Then, without the use of a printing frame, hold the glass side of the negative towards the lamp (about two feet off) for perhaps five or eight seconds. To remove the paper after exposure, simply put the negative in a tray of water, raise one corner of the paper with the finger-nail, and pull off slowly and carefully. By loosening one corner first, the water exerts a lifting action on the paper and it comes off without harming in the least the negative film. So easily can this be done, that I am informed an actual experiment was tried, where in nine minutes after the exposure was made, the negative was developed, fixed, and washed. The gelatine paper was then exposed, stripped, developed and fixed, and a positive print furnished,

There is no difficulty experienced in developing the pictures. The richest color is obtained by the use of the well-known ferrous oxalate developer, restrained with a small quantity of bromide of potassium. I generally employ the proportion of one part of the iron solution to eight of oxalate, and strengthen with iron until the proportion is one to four, if necessary. I also find it is beneficial to start the image in an old developer, or one in which several pictures have been developed, and then when it is half out, pour off the old and put on the new. It seems to balance the effect of the developer nicely and adds more contrast to the picture. In cold weather the developing solution will work better if kept at a temperature of 60° or 65° F., which will tend to prevent the formation of blisters, or the swelling up of the gelatine film in small hills over the surface, concerning which I have heard some complaints lately from a few members. When the film dries, the blisters generally subside without showing. After the picture is developed, prior to fixing the sheet is soaked in a bath of

Sulphuric acid .....	1 dram.
Water .....	32 ounces.

but an improvement on this has been suggested by one of our members, which, while it accomplishes the same result, also prevents the formation of blisters.

The print is immersed, when removed from the developer, in a clearing bath composed of

Acetic acid .....	1 dram.
Water .....	32 ounces.

and washed over with this for two or three times. It is then rinsed in several changes of water and put into the hypo (1 to 6) to fix for ten minutes.

*(To be continued.)*

## THE PHILADELPHIA EXHIBITION.

(Continued.)

*Class 24A.*—Architecture, 8 x 10 and over, to Mr. George Bankart, Leicester, England, for a 10 x 12 view of the south front of Melrose Abbey, one of the many admirable specimens of this class of work shown by this gentleman.

*Class 24B.*—Architecture, under 8 x 10, to Mr. J. P. Gibson, Hexham, England, for some picturesque old houses at Gilesgate, Hexham, which have already won a silver medal at one of the English exhibitions.

*Class 25A.*—Interiors, 8 x 10 and over, to Messrs. W. H. Jackson & Co., Denver, Colo., for an 18 x 22 interior of the Church of Gaudaloupe, Mexico, an exquisite specimen of photography. A beam of sunlight falling across the floor and against a railing had a soft and delicate effect.

*Class 25B.*—Interiors, under 8 x 10, to Charles R. Pancoast, of Philadelphia, for one of his interiors of the Calcutta exhibition. A beautiful fountain in the foreground, entirely made of glass, contrasted with a dark corner at the other side of the picture, made this an extremely difficult subject, but one in which all the difficulties have been most successfully met and overcome. Such a picture could not, in the present state of the art, be more successfully taken.

*Class 26.*—Sculpture, to Mr. George Bankart, Leicester, England, for his monument to the Duchess of Montague, in Warkton Church. This beautiful piece of statuary was most admirably rendered, and far exceeded in merit any other work of the kind exhibited.

*Class 27.*—Machinery, etc., to Mr. Frank Bement, Philadelphia, for a frame of nine pictures of various kinds of machinery, which were well worthy of the honor conferred on them.

*Class 28.*—Photo-micrographs, to Dr. G. A. Piersol, Philadelphia, for a frame of microscopic subjects remarkable for their softness and full detail, showing all that the microscope could reveal and the camera record. Dr. Piersol also exhibited a frame of anatomical subjects well treated, and another frame of landscapes, etc., which showed that his talent is not confined to one class of work.

*Class 29.*—Enlargements, to Mr. Albert Moore, Philadelphia, for an 18 x 22 enlargement from a small negative by Mr. W. L. Shoemaker, of the Battle of the Centaurs, the large piece of statuary which occupies the center of the corridor of the Academy of the Fine Arts.

*Class 30.*—Instantaneous effects, not otherwise classified, to Mr. George Lemaitre, of France, for a series of four views of the Ghat, Benares, India, taken from a boat in passing down the river. This gentleman also exhibited a number of interesting street scenes and other subjects illustrating life among the natives in India and Ceylon.

*Class 31.*—Platinum Prints, to Wm. Willis, of Bromley, Kent, England, for an old cottage at Bury, Sussex. Mr. Willis' collection was one of the most artistic and attractive in the exhibition, and no one who saw it could but admit the beauty of first-class platinum work. A mill-stream in North Wales, Snowden Range, Cader Idris, and a storm effect on the sea-shore, were among the finest specimens.

*Class 32.*—Gelatin-bromide or chloride prints. No award was made in



this class, though we think if Mr. W. H. Rau had not been one of the Board of Judges, they could hardly have failed to reward the fine collection of this kind of work shown by his firm.

*Class 33.*—Porcelain pictures. In this class there was also no award.

*Class 34A.*—Transparencies, large, to Mr. W. C. Russell, of Baltimore, for an enlargement on glass, 36 x 38, of a view of Harper's Ferry. This was one of the first objects which met the view of visitors on entering the galleries, and nothing in the exhibition could have made the entrance way so attractive and inviting,

*Class 34B.*—Transparencies, small, to Mr. W. S. Bell, of Pittsburgh, for a beautiful picture entitled "Snow and Sunshine." This was a fine subject for a transparency and was most successfully treated.

Among the other transparencies which deserve special mention was one by Mr. Corlies, entitled "Harvesting," which to our mind presented much greater difficulties than the prize picture. The posing of the figures, the ox-team and horse, with the beautiful sky, made a picture of rare beauty and of the very highest merit.

Mr. John Bartlett exhibited some exquisite flower studies taken in a novel manner. The flowers were tastefully arranged on a table, across which the sun was shining so as to cast effective shadows, and the camera pointed downwards from above. By this means the flowers could be more easily arranged with graceful effect than if they had to be attached to a perpendicular wall or board.

Mr. Barrington showed a beautiful transparency—a portrait of a young girl seated on the railing of a porch, with a leafy vine forming a graceful framing to a charming picture.

*Class 35.*—Sets of six lantern slides, negatives and slides to be made by exhibitor, to Mr. J. E. Brush, of New York. This gentleman's work well deserved the recognition it received. His finest slide was considered to be one called "A Touch of Jack Frost." A view of Crawford Notch was also worthy of the highest praise. Fine slides were shown by Dr. Ellerslie Wallace, Jr., Mr. Charles Barrington, Mr. Corlies, Mr. S. M. Fox, and others. Two ladies, Miss Vaux and Miss Corlies, also showed slides, the first we have ever known to be made by ladies.

*Class 36.*—Sets of six to twelve pictures taken in a foreign country, or by a foreign exhibitor, to Dr. Ellerslie Wallace, Jr., of Philadelphia, for a frame of beautiful architectural and landscape subjects, taken mostly on wet collodion and washed emulsion plates.

*Class 37.*—Pictures by any new process not before publicly exhibited. No award.

Award of Honorable Mention to Messrs. W. W. Winter, of Derby, England, and C. H. James, of Philadelphia. Mr. Winter sent a set of six figure studies on 12 x 15 plates, which were well worthy of notice; the posing, lighting and treatment of the drapery being remarkably fine. Mr. C. H. James is also deserving of great credit for his unique pictures of the Luray Caverns by electric light.

It is on some accounts to be regretted that the restriction was made, requiring that the new process pictures should be such as had not before been publicly exhibited. While nothing entirely new was exhibited, the collotype work of the

Wells & Hope Company, and the phototype pictures by Mr. Frederick Gutekunst, are worthy of special note. The Wells & Hope Company show specimens of "Icchomeographs," a process of printing in colors from gelatine plates in which a separate negative is taken for each color in the picture to be copied; those parts of each negative representing other color being stopped out and not used in making the printing plate. Mr. Frederick E. Ives showed specimens of orthochromatic photography which fully demonstrated the value of this improvement in the art.

So much space has been required to describe the pictures for which diplomas have been awarded, that it will hardly be possible to do full justice or even mention many other meritorious pictures. The quality of the work shown throughout was of a very high average.

One of the most notable collections was the work of Mr. P. H. Emerson, of Southwold, Suffolk, England. His finest specimen was "The Furze Cutters," a 10 x 12 picture of a burly old English farmer at work in the field, cutting down furze bushes, with another figure, similarly occupied, in the distance. The soft warm tone and the atmosphere in this picture was very attractive. "Baiting the Lines," "A Suffolk Marsh," "Hedging," "The Hoers" and "Two to One," were among his best pictures; the natural posing of the figures being remarkable, and his success in this line of work most creditable.

Among the other notable foreign exhibits, mention should be made of Mr. H. Symonds, whose yacht pictures had a brilliancy and snap which was remarkable; Lieutenant C. E. Gladstone, R. N., who sent some fine 10 x 12 interiors of cathedrals printed in platinum; Captain J. Peters, R. C. A., Canada, who exhibited a number of small, but most interesting instantaneous studies, and snow and ice pictures illustrating Canadian life; P. Mawdsley, who showed street views in London, landscapes in England and North Wales; Colonel Waterhouse, of Calcutta, India, who was represented by reproductions in collotype, etc., of Indian carved work, silver ornaments, etc.; W. K. Burton, of London; J. G. Gibson, Tynemouth, who showed a picture of Earsdon Church, developed five years after exposure.

Frank G. Cauffman, of Philadelphia, showed great talent in figure composition combined with the best technical work. Among his best pictures are "May Days" and "Clear the Track," a picture of two boys coasting, the posing being excellent.

Alfred Clements showed some excellent platinum work, both in contact printing and enlargements.

Wilfred French, of Boston, had among his pictures a fine study of chrysanthemums, and an oak at Sudbury, which are deserving of special mention.

Mr. G. E. Cabot deserves credit for some excellent portrait studies, one of a young girl knitting, and an old gentlemen, being among the best. Nantasket Beach, some interiors and trees, should also be noticed. Messrs. Geo. Tasheira, S. C. Partridge and H. B. Phillips, of San Francisco, California, send good pictures of things which can only be seen on the Pacific Coast.

Mr. A. Hemenway, of Boston, showed platinum prints of a warm, brown tone, which was pleasing and artistic, suggesting old etchings. "Before Dinner" and "After Dinner," two studies of the head of a donkey, were capital.

C. S. Bradford, Jr., of West Chester, showed landscapes and figures. His

posing and arrangement of groups was excellent, as was also his chemical work. "At the Cottage Door," "Drinking Tea," and "Me Pigtail," were his best figure studies.

Thomas Eakins' "History of a Jump" was an instantaneous study, in which nine successive exposures were made on a nude figure while making a single jump.

Mr. Charles Barrington's "On the Tow-path," some portraits, and a fast express train crossing a bridge, were illustrations of this gentleman's skill and fine work. Mention should also be made of the work of Mr. Galloway C. Morris, F. G. Rogers, G. N. Tatham, Jr., Professor W. D. Holmes, David Pepper, Jr., J. Mitchell Elliot, Joseph W. Bates, Paul J. Sartain, Geo. Vaux, Jr., Dr. A. G. Reed, Marriott C. Morris, Henry T. Coates, John Struthers, Dr. J. J. Kirkbride, F. A. Jackson, of New Haven, and S. C. Nash, of Harrisburg, but want of space forbids any description of their excellent productions.

An exhibition of such a general character, embracing exhibits from such a wide extent of country, cannot fail to be in the highest degree instructive to all whose privilege it was to visit it, and to stimulate all who are interested in the camera to renewed efforts to produce photographs which are not mere haphazard reflections, but pictures which embody the study and skill of the artist.

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[From the *Scientific American*.]

## A SUBSTITUTE FOR GLASS IN PHOTOGRAPHY.

(Continued.)

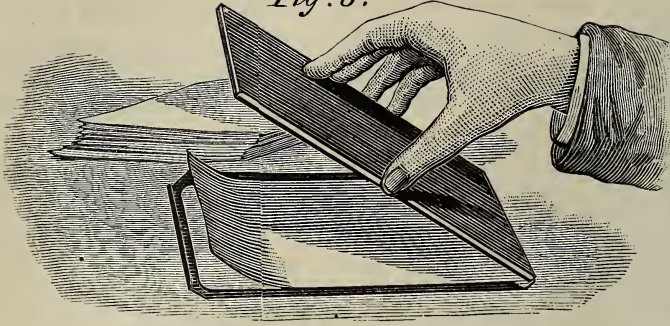
THE necessity of providing some accurate yet simple means of measuring the paper as it passed from the supply spool to the reel was apparent to the inventors, and the simple devices just described, which have been adopted, deserve a word of praise. If the measuring device had been attached to either the supply spool or reel, to be guided by their respective revolutions, it would have been inaccurate; for as the paper is taken off the supply spool it revolves more rapid, while with the reel the diameter is rapidly increased in proportion as the paper is wound upon it, and the amount thus taken up must constantly vary. Hence it was the constant diameter of the guide rolls, and the revolving of the same by the passing paper, which furnished an accurate means of measurement,

Passing now from the guide rolls, we come to the supply spool and reel, and the mechanism for rotating and holding them. Both are supported by centers arranged in the metal frame, just under and behind the extreme edge of the exposing platform, their respective positions being seen in Figs. 1, 4, and 5. [See last BULLETIN, page 87.]

In Fig. 1 the supply spool will be noticed at the upper end. Fig. 4 shows a more detailed view of its particular construction, and the manner of its insertion into the roll holder. One end of the spool has a rectangular recess or saw slit, which corresponds to the rectangular-shaped chuck projection on the metal center. The other end has a hole in which the adjustable screw center, seen upon the right of Fig. 4, is inserted. The chuck center holding the spool is attached to an arbor carrying a flat coiled spring, which trails in its inclosing drum and maintains a constant tension upon the paper. The spring drum is held stationary in a recess of the frame by a gravity pawl (see right hand end, Fig. 2), which



*Fig. 8.*



*Fig. 10.*



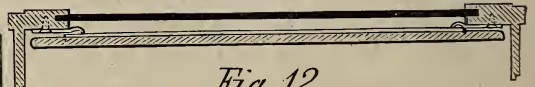
*Fig. 9.*



*Fig. 11.*



*Fig. 12.*



may be thrown off and the tension removed while the paper is being attached to the reel.

The sensitive paper is sent out already rolled upon the spools in packages, as shown in Fig. 11, and it is only necessary to insert the prepared spool in the holder to obtain a fresh supply; usually enough paper is wound upon a spool for twenty-four exposures; in small sizes forty-eight exposures are furnished.

Fig. 5 illustrates the mode of securing the free end of the paper to the reel. One portion of the circumference to the reel is flattened in the direction of its length, over which lies a metal clamp pivoted upon the ends of the reel. The clamp is easily raised or lowered, by a lateral movement, from the flattened surface of the reel. In Fig. 5 the clamp has been raised by the right hand, while the free end of the paper is drawn through with the left, and afterwards straightened with both, when the clamp is pressed down, thus securely fastening the paper to the reel; rotating the latter at once winds up the paper. The reel is held between a chuck center and a screw center, similar to those holding the supply spool, with the exception that the chuck center has a recess instead of a projection, which peculiar construction prevents any mistake of the spool and reel being attached in the wrong place in the dark room. A small spring pawl rests on the periphery of the milled head of the reel chuck, giving sufficient friction thereto to prevent the reel from unwinding. In the center of the milled head of the reel chuck center is a threaded hole for receiving the screw-threaded operating key. The key when screwed into the milled head operates very similar to the permanent keys attached to the small clocks. Rotating it to the right revolves the reel; rotating to the left unscrews it from the reel. Around the threaded hole is an annular groove, in which the inner edge of the loose tubular key guide drops when the case covers the frame. The threaded hole and annular groove may be seen in the lower milled head, Fig. 1, and the loose tubular guide at the left hand end of the case in Fig. 3, and lower end, Fig. 6. The latter also shows the key inserted. The object of this construction is to make a light-tight joint around the key aperture. Fig. 12 shows a cross section of the case at the slide side; two brass flat springs running lengthwise along the inner edge of the slide aperture bear upon the margin of the paper as it travels over the exposing platform, preventing it from buckling or curling up.

Having now described the various parts of the apparatus, we will first explain the operation of inserting and attaching a fresh spool of sensitive paper. By throwing back the spring clamps and drawing out the indicator knob and loose key tube, the outside case with its slide is easily raised from the back, exposing to view the frame and rolls, as shown in Fig. 2. Fig. 3 shows the case partly raised.

Firmly holding the exposing platform with the left hand, and with the thumb and middle finger of the right compressing inward the two spring bolts on the right hand end of the back, the frame is elevated, as shown in Fig. 1.

Now, lifting the spring pressure roll or brake, and holding it between the index and second finger of the left hand, while the supply spool is also held between the index finger and thumb, as shown in Fig. 4, the depression or saw cut in the end of the spool is pushed upon the rectangular projection on the center chuck. With the right hand the threaded thumb-screw is passed into the hole at the opposite end of the spool, holding the latter firmly in place. The pressure



roll or brake is then released, so that it presses against the spool, and prevents the paper from unwinding when the end is released; the inclosing bands are then broken, and the free end of the paper drawn under and over the guide measuring roll across the exposing platform, over the second guide roll, down to the reel, as shown in Fig. 5, the frame in the meantime having been reversed on the back; that is, the reel end elevated instead of the spool end.



FIG. 7.

The paper is fastened to the reel by the flat pivoted clamp as previously explained; and after seeing that it occupies a perfectly central position across the guide rolls, the spring pawl on the reel and the gravity pawl on the tension drum being in position, the slack of the paper is taken up by revolving the tension by means of its milled head until the paper is stretched flat on the exposing platform. The frame is then secured in position on the back by the four spring bolts. The whole is then covered by and fastened to the outside case. The paper should now lie perfectly smooth and flat on the face of the exposing platform.

The slide on the front of the case is next withdrawn (see it partly withdrawn in Fig. 6), and with a lead pencil, a line is drawn across the paper at each end of the slide opening, for the purpose of determining where the first exposure commences. On replacing the slide, the holder is removed from the dark room and attached to the camera, to which it has been previously fitted, and so arranged that the plane of the exposing platform shall occupy exactly that of the ground glass.



We will now suppose that the object has been properly focused, the ground glass removed, and the holder attached to the back of the camera, the same as any ordinary plate holder, by means of suitable pins and catches. The slide is withdrawn and the exposure made by uncapping and capping the lens in the usual manner, and the slide replaced. The operating key is screwed home and the indicator knob raised and turned around by the thumb and index finger until its mark stands at zero, when a spring forces it into place on to the square head of the shaft of the indicator spur wheel.

It is now desired to bring a fresh surface upon the exposing table for a new exposure; with the hand the operator rotates the key similar to the winding of a clock (see Fig. 7), which in rotating the reel carries the paper over the face of the exposing platform. Soon a click is heard, and the indicator knob has made one-quarter of a revolution; then a second, third, and fourth click, when it will be found that the indicator has made one complete revolution, informing the operator both by sound and sight that a fresh sensitive surface has been brought into place. With each click the metal points on the surface of the measuring guide roll puncture upward the paper at each margin, making four raised dots on each edge for each exposure.

*(To be continued.)*

[From *La Nature*.]

## HOW PHOTOGRAPHIC DRY PLATES ARE MADE.

BY GASTON TISSANDIER.

THE amateurs in photography have become legion; so much so that we recall, this summer, during some days at one of our watering places, having seen these operators with their cameras almost touching one another on the sea-shore during the hour of bathing. There are few tourists who would not become photographers, and it is not wonderful that the manufacture of apparatus and photographic materials has taken considerable development. The value of photographic dry plates made in Europe is estimated at fifty millions of francs\* for the annual production. Analogous figures on the sensitive paper used will show to what extent the photographic trade has reached.

The paper which serves to make the images is made almost entirely by a single French house, and this factory works annually 50,000 reams of paper. This paper is covered with a coat of albumen and sensitized. The paper thus prepared, and valued at the low figure of 300 francs a ream, its production attains the sum of fifteen millions of francs. Other papers, gelatino-bromide, carbon, etc., amount to five millions of francs. If we add to these the value of the chemicals and cabinet-work, we arrive at a total annual value of fifty millions of francs. We thus see that the preparation of dry plates is only a portion of the total manufacture of photographic materials. Of all the professional photographers, all the amateurs, who use them to-day, are there many who know their mode of manufacture? We think not. In order to give an account of it we have visited for this purpose one of our largest French manufacturers, M. D. Hutinet, who was much pleased to show us, in all its details, his works at l'Avenue Parmentier,

\* = \$9,650,000.

at Paris. It appeared to us to be of interest to all, and very instructive to the practical-minded, to know the mode of making the dry plates which they so constantly use. It is this that decided us to write the present article.

1. *Preparation of the Emulsion.*—A great number of formulas have been published in special treatises. One of the most simple is the following: Introduce (operating in an apartment lighted by ruby-red light) in a flask with a large neck 300 cubic centimeters of distilled water, 18 grams of ammonium bromide, 12 grams of good gelatine. When the gelatine has swelled, put the flask in a water bath and raise the temperature to  $40^{\circ}$  C. In another flask dissolve 27 grams of crystallized silver nitrate in 150 cubic centimeters of tepid distilled water. Pour the silver solution in a fine stream into the gelatine, which a circular movement of the arm keeps constantly agitated, until the two liquids are united in the same flask. Afterwards place the flask in a water bath, and then raise the temperature just to ebullition.\* Stir the emulsion with a long paddle of glass, and continue the boiling of the water bath 15 to 20 minutes, after which allow the temperature to fall to about  $35^{\circ}$  to  $40^{\circ}$  C. and add 12 to 15 grams of gelatine, preferably swelled in a little distilled water. After these successive operations, turn the emulsion into a dish and allow it to become cold in darkness. After setting to a jelly, it is washed to get rid of the useless and deleterious salts, passed through a filter, and collected in muslin supported on a sieve. Wash for 20 minutes under a faucet. The emulsion is then replaced in the flask, where a third dose of gelatine, 12 to 15 grams, is melted with the emulsion, which is then ready to be coated on the glass.

2. *Spreading the Emulsion on the Glass.*—In a large factory the spreading or coating of the emulsion on the glass offers serious difficulties. The time of coating should be as short as possible, because the condition of the emulsion changes constantly; then the operation should be executed very promptly, so that the coat should be perfectly homogeneous. Coating by hand is always imperfect, causing inequalities in the thickness of the coat, which is always more considerable on the side where the gelatine is made to flow upon the inclined part of the glass.

The operation of flowing the emulsion is done mechanically in the works of M. Hutinet. Our obliging cicerone was absolutely indispensable to us in visiting his works, because alone we should have had to be brave on account of the darkness that reigned there. On entering the laboratory we perceived nothing except black walls and some luminous red fires. But little by little, as the eye got used to the darkness, it found the light quite appreciable from the little lanterns of red glass placed here and there. Little by little we discovered the hands at work; and finally, after a quarter of an hour, our eyes were used to the obscurity, and we were shown the coating apartment and found the machine which is represented in our first picture (Fig. 1).

This apartment measures 20 meters long.\* The glasses, previously cleaned, have exactly the width they should keep when cut once; their length is 1.20 meters. Each glass is placed on two endless leather belts, which are moved by a steam engine.

The glass thus carried passes under a roller, which presses very lightly on its

---

\* Nearly 22 yards.



surface, a counterpoise serving to keep it in equilibrium. The emulsion is contained in a vessel heated in a water bath, and which is seen in the center of the figure; it flows slowly and in any desired quantity by the aid of a glass stop-cock,

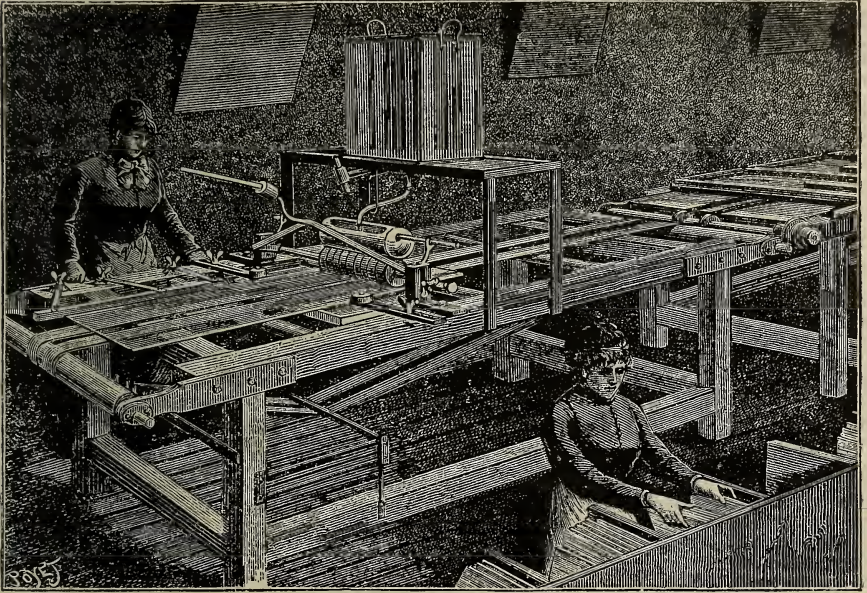


FIG. 1.

and falls into a dish having the width of the roller. This dish is pierced in the base with small holes which permit the emulsion to spread uniformly on the roller, which, in turn, by its rotary movement, covers the glass with emulsion. The glasses are placed one after another. They continue their journey for a length of 12 meters, and, during this time, the emulsion is congealed.

*(To be continued.)*

## OBITUARY.

DOUGLAS HOVEY.

DOUGLAS HOVEY was born in Hampton, Conn., February 22, 1828, and died at Rochester, N. Y., February 8, 1886. He moved to Grandville, where he lived with Mr. G. Parsons until he was twenty-one years of age; he then, in company with S. Root, went to Philadelphia, and engaged in the photographic business. He was also engaged in photographic work in New York for several years.

He went to Rochester, N. Y., in 1854, and opened a gallery on Main street with Mr. J. Kelsey, and afterward the firm was known as Hovey & Hartman, and soon gained a wide reputation as first-class artists.

While in that business he commenced the manufacture of albumen paper, and about twenty years ago he devoted himself exclusively to that.



Mr. Hovey had been more or less sick for the past seven or eight years, and has been confined to his house during the larger part of the time. He leaves a wife and two sons, C. F. and J. F. At the time of his death he was President of the American Albumen Paper Company.

### MARRIAGE OF MR. THOMAS R. DALLMEYER.

THE marriage of Mr. Thomas R. Dallmeyer, eldest surviving son of the late Mr. J. H. Dallmeyer, F. R. A. S., of Sunnyfield, Hampstead, to Miss Fanny Julia Thomas, youngest daughter of the late Mr. Charles Thomas, and granddaughter of the late Rev. Sir Godfred Thomas, Bart., Vicar of Bodiam, Sussex, was celebrated in St. John's Church, Upper St. Leonards, on the 13th inst. The marriage ceremony was performed by the Rev. T. W. Adam, Rector of Hollington. The bride arrived at the church at 11.30, accompanied by her late guardian, Mr. Ade, who gave her away. The bride wore a dress of ivory satin and frise velvet, trimmed with duchesse lace. A tulle veil, covering a wreath of real orange blossoms, was fastened with a diamond brooch, the gift of the bridegroom, as were also her other ornaments, a diamond and sapphire necklace, diamond bracelet and ear-rings. She carried a handsome bouquet of lilies of the valley and orange blossoms. The bride was attended by her nephew and niece, Master Walter and Miss Ethel Breeds, and six bridesmaids: Miss Thomas, sister of the bride; Miss Dallmeyer and Miss L. Dallmeyer, sisters of the bridegroom; Miss L. Heathcote and Miss J. Biddulph, cousins of the bride; and Miss Pasley, a friend. They were dressed in white mervilleux satin, trimmed with lace, and white velvet hats. Each wore a small diamond brooch, and carried a handsome bouquet, both gifts of the bridegroom. The bridegroom was accompanied by Mr. Bryant, as his best man. The wedding took place at the house of the bride's brother-in-law, Mr. Thomas Breeds. Among those present were Mrs. Dallmeyer, Mr. and Mrs. Thomas Breeds, Mr. and Mrs. Ade, Mr. and Mrs. Pattison, the Rev. Mr. and Mrs. Adam, Mr. and Mrs. Sayer, Captain Sir Godfred Thomas, Bart., R.A., Lieutenant-General Thomas, C.B., Colonel Somerville Burney, Mrs. Breeds, Mr. Sidney Dallmeyer, Miss Heathcote, Mr. Owen Dallmeyer, Mr. Bryant, Mr. Morris, Mr. Redmond, Mr. Sinyanki, and Mr. Fremlin. The bride's traveling dress was of dark-red cloth, handsomely trimmed, with velvet hat and jacket to match. The bride and bridegroom left about two o'clock for London *en route* for the South of France.—*Hastings and St. Leonards Observer*.

I AM very pleased with the splendid development you are going to give to your PHOTOGRAPHIC BULLETIN. It is really a very fine and generous idea of yours to reinforce it with twenty-four illustrations instead of twelve. I consider it a nice New Year's gift to your subscribers.

About the three dollars, I have the conviction that there can be no better placement for the photographer's money.

It is the only friend that gives to the lucky subscriber brains, success and money.

GUST. VAN MEERBECK,  
Antwerp.

It is a household necessity with me.

A. A. BAKER.

THE BULLETIN is as welcome as the face of an old friend. It is like good wine, for it grows better and better as it grows older, and each number seems to be trying to be better than the last—and, what is more, it generally succeeds.

I wonder any photographer should go without this publication to keep him posted in the progress of his art.

E. K. HOUGH.



"Q. At what temperature does the bath usually work the best?

"A. Seventy to eighty degrees Fahrenheit. The sensitizing bath, as well as all other solutions, washing waters, hypo and salt, to insure good results and success must be at that height at all seasons."

"Q. Do you float the paper longer in winter than in summer?"

"A. Yes, when the rod is used, full two minutes is required (at above strength of silver) or from the time curling ceases until it lies flat. If plainly floated and drawn from solution without removing the surplus, one and a half minutes will answer, but it should hang so as to drain and dry easily."

"Q.—Do you advise drawing the paper off from the bath over a glass rod, or over the edge of the porcelain dish?"

"A.—The glass rod is preferable; in fact should always be used, as dust and foreign matter will collect on the wet face of the dish; also a rim of scum will form at edge of solution; that will be taken up on the surface of paper, causing large blotches impossible to print through and impossible to wash off, also streaks, spots, etc."

"Q.—Is it advisable to blot off the surplus before hanging the paper up to dry?"

"A.—Only when an extremely glassy or hard surface paper is used and the paper dries with tear-drops or rivulets which a weaker bath will not prevent."

"Q.—What devices, if any, have you adopted for preventing the curling of the paper while drying?"

"A.—When the sheet has been hung up to drain, wipe off the surplus solution from the edges and corners with a tuft of absorbent cotton or blotting-pad; and when partly set, place each sheet back to back, then clamp the corners and edges with clothes-pins, kept clean, and for this purpose only; to remain on until the paper is fumed."

Mr. ROOSEVELT—Laying it across a rod, with the face up, catching the two ends together at the lower parts, bringing the surfaces outside so that they would not rub each other or be affected by crossing the rod, that I have always found was the best and easiest plan.

Mr. SPAULDING—I have had the same experience. I have found the best way was to have eight or ten wooden rods with a place to support each end, and I put my rod in position and fastened the ends of the paper with clips, and when that rod is full I set it back out of the way and take a fresh rod.

Mr. BEACH [reading]—

"Q.—Should the paper be used immediately after sensitizing or will it keep for a few days?"

"A.—In the summer season, and damp weather of spring and fall, only enough should be prepared that can be printed on the same day as sensitized, and that as quickly as possible; placed in a dry atmosphere; afterwards washed and toned speedily or early. In the winter months paper floated on a pure, clean bath and preserved in a moderately cool place, with the sheets tightly pressed together (the face of one on the back of the next), can be used to advantage three to five days thereafter. Would advise that the edges be protected from gas, chemicals, acid and foul-air fumes. At this season a refuming with strong ammonia and assisted by slight heat, assists printing action."

"Q.—Have you any special method of fuming? If so, describe it and the apparatus."

"A.—No more than a large box or closet need be used (somewhat longer than square in shape), that the volume of ammoniacal gas can get on top as well as bottom of the sheet. Arrange the holder so that about a quarter of the space may be above the paper. Use plates for holding the ammonia and use the latter liberally."

"Q.—How long do you fume?"

"A.—Fifteen minutes in summer, twenty minutes to half an hour in latter part of fall and winter. Much paper has been condemned which worked well when fumed long enough. Always use heat to assist the evaporation of ammonia in winter."

"Q. What is the greatest length of time the paper can be kept before use after fuming?"

"A. I think I answered this above. Not more than three to five days in cool weather; not then without refuming for half the usual time. Six to eight hours in summer and damp weather."

"Q. Do you know of any way of keeping it longer?"

"A. I have no practical knowledge. Paper placed between sheets of blotting-paper prepared with soda (often published) appears to me to be the most reasonable way of preserving it, especially as the blotter and soda would protect it from the moisture in the atmosphere."

"Q. In printing, what is the guide you adopt to tell when the picture is deep enough to tone?"

"A. From a thin negative, moderately defined, and with good modulation, which requires



considerable depth in the high lights, but well-timed, lighted, etc., I print slightly darker than wished for in the resulting proof. But if the negative be strongly lighted, showing strong contrasts in black and white, I cover the shadows with tissue-paper, different thicknesses, so as to allow considerable graying of the high lights, or rather to print through the more opaque parts."

Dr. MASON—I go altogether by my negative; should one portion of it be more intense than another it will require deeper printing. I very often cover the shadow or thinner portion of a negative with one or two thicknesses of tissue-paper with a ragged edge, so that it won't leave any line of demarkation on the print. For the black or purple tones I always intend to make the prints pretty deep. If I want to get quite a warm tone, then I don't print as deep, nor tone as long.

Mr. BEACH [reading]—

"Q. Have you any special way of vignetting a negative?"

"A. A very good method and highly pleasing effects may be produced by laying a sheet of tissue-paper about one-half to three-quarters of an inch from negative, cutting an opening somewhat larger than the part required, and another and another, lessening the size of the openings each time till the part wanted is the strongest; then cover with final sheet. This allows of the vignette blending off to the edge of negative very evenly. For portraits the opening is better cut smaller from card-board or envelope paper, to make more of an abrupt edge to the proof."

(To be continued.)

## What Our Friends Would Like to Know.

N. B.—We cannot undertake to answer communications of a technical character except through the columns of the BULLETIN. Correspondents will please remember.

Q.—N. H. P. writes:—Will you please inform me through the columns of the BULLETIN how the asphaltum varnish used for coating trays, etc., is prepared?

A.—The coating upon the surface of trays, etc., is what is termed japanning, and is done by heating in a fire, but the *modus operandi* we do not know. If your trays have become rusty, clean them free from rust with emery paper, and varnish with japan varnish used for coating iron, which can be obtained at any paint store.

Q.—S. F. asks:—Is Dallmeyer's rapid rectilinear lens adapted for taking portraits on dry plates; if not, which series would you advise me to purchase for making the best work?

Also state the best way to mix alcohol and Castile soap for lubricating prints previous to burnishing them.

A.—You can use the R. R. lens for taking portraits; but we should recommend the D series as best suited for this kind of work. Put some thin shavings of good Castile soap into alcohol and shake well; in a short time sufficient soap will have dissolved to answer your purpose.

Q.—P. writes:—Will you please to inform me whether dry plates are used in the photolithographic process, and if so, what treatment they require to render them available for that purpose, it being essential that the lines thereon should be clear glass?

A.—Anthony's transparency plates have been used in photo-engraving where clear glass for line work is essential. We think these plates would work equally good in photo-lithography. Formulas go with them.

Q.—G. E. W. writes:—Will you please inform me through the BULLETIN about the following. I had a printing bath and a silvering bath that I mixed together and boiled down to about half a pint and filtered thoroughly. Will the silver work all right in baths without being fused or boiling?

A.—If you intend to use it for a negative bath, make it alkaline with carbonate of soda, place in sunshine for several days, filter and neutralize carefully with pure nitric acid. If the bath is of the proper strength, this should work all right now.

Q.—G. L. L. writes:—Will you be so kind as to inform me through your magazine just how to use the salts of lead, and which is the best salt to use for the elimination of hypo, and also if it is good to use for the same purpose with dry plates?

A.—Take about as much lead acetate as you can put upon a 25-cent piece, and dissolve it in one quart of water containing enough acetic acid to make blue litmus turn quite red. If the solution is not thoroughly clear, filter. You can use it for negatives as well as prints, and it works well.

Q.—J. F. L. writes:—Increasing the quantity of the pyro increases the intensity of the negative. An old developer gives more intensity than a new. Why? Is the alkali more weakened by use than the pyro?

*A.*—An old developer, if not kept in a corked bottle, becomes stronger in alkali by evaporation. The old pyro in a developer probably acts like bromide as a restrainer, and therefore new pyro added to such developer gives greater density.

*Q.*—T. & P. write:—What is the best antidote for pyro poisoning?

*A.*—There is no certain remedy but to use a quick emetic.

*Q.*—H. E. C. writes:—The paper I now have gives brown prints, and in the toning will fog, the picture being very sharp when printed. I have since experimented with the toning bath, but cannot find out what is wrong, and would like your opinion in regard to toning. Inclosed find proofs.

*A.*—Your prints appear to be short of fuming, and the toning bath was probably acid. Fume half an hour, and see that the toning bath is alkaline.

*Q.*—L. E. B. asks:—Will you please give through the columns of the BULLETIN a good method for burnishing unmounted photographs 8 x 10 inches in size and less?

*A.*—This can be done by attaching the two upper corners of an untrimmed print to a card, and running through a burnisher in the ordinary way. Use only just enough paste to attach the corners of the card, so that it can be cut off afterwards.

## Views Caught with the Drop Shutter.

ORVILLE ALLEN, of Allen Brothers, with his wife, gave us a call lately.

PEARSALL, of Brooklyn, has applied for a patent for a new style of portrait.

WALTER W. B. RODGER, of Greenock, Scotland, visited us recently, and we had a pleasant and interesting time with this enthusiastic amateur photographer.

THE TISDELL RUBY LAMP has been much improved, and is undoubtedly the best pocket lamp for amateurs. It is compact, free from odor when in use, and always ready.

MR. JOSHUA SMITH, of Chicago, and his wife have gone South on a pleasure tour.

GAYTON A. DOUGLASS & Co., of Chicago, have a large stock of new photographic supplies which they have purchased recently; prominent among them being cameras and other apparatus from the factories of our publishers, from whom they have purchased a large consignment.

OUR PUBLISHERS have found that the large increase in their photographic business, at 591 Broadway required more room; and they have therefore transferred the department of fancy goods and albums to their factory at Greenwich street, New York.

ROBERT DEMPSTER, formerly of Quincy, Ill., has removed to Des Moines, Ia., where he will open with a large stock of photographic materials.

A. M. COLLINS, SON & Co., the noted card manufacturers, of Philadelphia, have issued a very pretty and neat catalogue of card stock suited to amateurs and kept by our publishers. This catalogue is unique.

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*Albany*

## Sound Steamer

UNDER FULL HEADWAY.

NEGATIVE BY J. J. HIGGINS, M. D.  
ON THE STANLEY DRY PLATE.  
PRINTED ON THE CELEBRATED N. P. A.  
PENSE A BUREAU D'ART.

# ANTHONY'S Photographic Bulletin.

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Prof. CHARLES F. CHANDLER, Ph.D., LL.D., *Editor.*

ARTHUR H. ELLIOTT, Ph.D., F.C.S., *Associate Editor.*

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MARCH 13, 1886.

Vol. XVII.—No. 5.

## WHAT IS CYANINE?

SINCE the development of the study of orthochromatic photography and the publication of the methods of Victor Schumann, many persons have asked us the question which is at the head of this article. The material under consideration has been recognized for a long time by chemists, and has been known as a dye-stuff for many years; but until recently it was of little interest to photographers, and consequently few of those in the photographic world knew of its existence.

C. Greville Williams, an English chemist, in about the year 1861, was experimenting upon chinoline made from cinchonine, one of the alkaloids found in Peruvian bark, and he discovered a coloring matter which received the name cyanine on account of its beautiful blue tint. This chinoline is obtained from the alkaloid cinchonine by submitting it to dry distillation with caustic potash. It can also be obtained by submitting quinine or strychnine to the same treatment. This process gives an oily distillate, which by repeated purification yields a colorless, transparent chinoline, as an oil having a specific gravity of 1.081 and boiling at about 460° F. When this oil is mixed with iodide of amyl\* and heated in a sealed tube for several hours at the temperature of boiling water, it gives crystals of iodide of amyl-chinoline. By heating these crystals with caustic potash solution, a resinous mass is obtained, which is chinoline-iodo-cyanine, or the so-called iodo-cyanine, or, briefly, cyanine.

This beautiful coloring matter, which has been known for a quarter of a century to the chemist, has never been successful as a dye-stuff, probably owing to the cost of its production, and the fact that its color is not fast. To-day it has become extremely interesting to the photographer as a means of producing pictures with a more perfect truth to nature than has hitherto been possible without retouching; giving their true value in light and shade to all the colors of the spectrum.

As now obtained in commerce, the dye-stuff appears as a bronze-colored powder or as fine bronze crystals with all the beautiful prismatic shades so well known in the wings of the Brazilian beetle. By gaslight the coloring matter has a beautiful lilac tint; but is unable to withstand the action of sunlight. This last fact is probably the cause of its usefulness in orthochromatic photography. Chlorophyl, the green coloring matter of plants, is also destroyed by sunlight, and it also is very active in making photographic plates sensitive to colors. The

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\*Made from amyl alcohol, which is found in the fusel oil of corn whisky.

breaking up of these materials under the influence of the sun's rays is probably the reason that they facilitate the reduction of the silver salts in the formation of the photographic image.

The chemical constitution of cyanine is  $C_{28} H_{35} I N_2$ , and it belongs to the class of bodies chemists call diamines. Chinoline, or rather a chinoline, isomeric with the one obtained from cinchonine, is now prepared from a mixture of aniline, nitro-benzole and glycerine. This body, although identical in composition with that obtained from the natural alkaloid cinchonine, does not yield iodo-cyanine with amyl iodide and subsequent heating with potash. It is therefore important that the right kind of chinoline is used in the preparation of the dye-stuff. Should a demand arise for quantities of this substance, it will be a fine field for chemical research to obtain the chinoline necessary for its preparation from some cheaper source than natural cinchonine, while incidentally it may lead to the production of artificial quinine, to which it is closely related.

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#### EDITORIAL NOTES.

OUR friend, Prof. P. W. Bedford, of the *Pharmaceutical Record*, recently showed us a neat little convenience for the magic lantern, which we think deserves mention. It is a simple black walnut frame to hold, in place of the regular lantern slide, a piece of mica, gelatine, or any other equally transparent and thin material, which may be written on, figures drawn, or sketches made in black ink, and is particularly admirably adapted for illustrative purposes in lectures. A piece of metal, tin or sheet iron, the size of the frame and with the same opening, hinged on one side, holds the mica with the inscription in its place. We think every user of the magic lantern would find this device very convenient.

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THE Pacific Coast Amateur Photographic Association are to have an exhibition in April, and we note with much satisfaction that the walls on which the pictures are to hang are maroon. We are perfectly satisfied that in leaving the selection of backgrounds to the taste of individual members is a mistake in these amateur exhibitions. An earnest call is issued that the exhibition be representative of *all* the members of the association, and not of some half dozen. This also is a good idea, and meets with our entire approbation. Another novel feature of this exhibition will be the exhibition of apparatus.

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THE "British Journal Almanac" and the "Year-book of Photography" have been here for some time, and as they are teeming with so many good things pertaining to photography, we advise all who have not obtained copies to do so at once.

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CHICAGO has a new photographic society, the result of an amalgamation of the different societies that formerly existed there. The officers are: President, Dr. H. D. GARRISON; First Vice-President, G. F. GALE; Second Vice-President, G. H. SHERMAN; Secretary, C. GENTILÉ; Treasurer, H. O. TOLMAN. This new society starts with much vigor, and we wish it every success.

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AT a recent meeting of the Manchester Photographic Society, Mr. I. S. Pollitt



showed a method by which dry plates could be developed in open daylight. He uses a dish with an orange-glass bottom and wooden sides, and covers it with an orange-glass cover. The course of the development is seen through the glass.

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A NUMBER of representative firms of lithographers met in New York recently to organize a trade association, and a committee was appointed to devise a plan and nominate officers.

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ONE of our Mexican friends recently sent us a print of a view of the "Jardin de la Independencia," in the City of Queretaro, taken on the 5th of February, and showing the ground covered with snow. This is a very remarkable occurrence in such a latitude.

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#### THE EXHIBITION OF COLUMBIA COLLEGE AMATEUR PHOTOGRAPHIC SOCIETY.

COLUMBIA College Amateur Photographic Society is an organization of the students of the college, who are interested in the development of the photographic art. Although only about one year old, they gave recently an exhibition of the work of the members which was a most pleasant surprise to all who saw it. The exhibition was held in the handsome Museum of Applied Chemistry in the School of Mines, and the arrangement of the pictures was such that they were admirably lighted. Several hundred prints were exhibited, and the range of subjects, as well as the execution of the technical work, showed great enthusiasm and much skill on the part of the members. It will be impossible to note all the good points that we saw in our visit to the exhibition, and our good friends, the members, must take kindly to some of our criticisms, which are meant to stimulate to better work in the future, rather than mere fault-finding.

C. W. and A. A. Stoughton had a large number of prints from a variety of subjects. Among those that interested us were "Old Spanish Houses, San Francisco," "On the Columbia, Oregon," "Brimfield Lake," "Model of the Mayflower," an excellent piece of interior work, showing the model of the famous Puritan craft in what appears to be a church edifice. Group of students taken on the college grounds is an excellent piece of work. An interior, showing a room with handsome furniture and bric-a-brac is also very good. Another print is "A Study of Head," which pleased us very much, and is a fine piece of artistic work. Two portraits of ladies are also excellent. A group of girls, entitled "Cat's Cradle," is a very happy composition; while in the line of architecture the views of the college buildings are uncommonly well done. But the prints that pleased us most in this exhibit were a set of eight or more views of snow scenes on the roads in the upper part of Manhattan Island. There were 8 x 10 prints of scenes on Boston avenue, Prospect avenue, Union avenue and other places near, and were among the finest work of the kind we have ever seen. The snow on the fences and trees, the beautiful effects of distance, and the great clearness of the pictures, gave them an artistic appearance seldom seen in amateur work. Altogether we must congratulate the Messrs. Stoughton on their remarkably fine exhibit; which, beside showing silver prints, also contained a number of excellent examples on the permanent bromide paper. In the latter case we noted some exceedingly artistic pieces of framing and mounting, in the

shape of mats of very rough, light colored, thick Manilla paper. The effect of this device was remarkably pleasing.

H. V. Tiemann had a number of prints from quite a variety of subjects. There seems to be few things in photographic exploits that he has not tried his hand at. A number of instantaneous pictures show uncommon skill in this direction. Among many exhibited, the most remarkable are a lawn tennis party, and a boy jumping on a bicycle. This latter is uncommonly good and clear. Among scenery we noted "Minnehaha Falls, Minn.;" several views of "Arch Rock, Mackinac Island;" and a view of "Manitou, Colorado." This last is one of the best long-distance views we have ever seen, and is particularly clear and brilliant. Excellent views of shipping, and the steamer Sunnyside, were also shown, together with an excellent view of the St. Louis Bridge.

At about this point in the display of prints, we noted an exquisite transparency portrait of a lady by F. McM. Stanton. It was beautifully soft, and made an uncommonly artistic picture.

Another transparency, also found here, was a fine view in the Catskills, taken, we think, by Dr. A. P. Hallock, and full of fine detail, making a picture of great beauty.

E. D. Church exhibited a number of 8 x 10 prints. One of these was a fine interior of the machine-shop of the Continental Iron-works, showing a hydraulic stoker for gas-works. The detail was very good, the whole print being quite sharp. Among the other prints, we noted a number of views of waterfalls, full of fine detail and very artistic.

At this point we found a number of frames of amateur work, loaned the society by request, from the collection of our publishers. These included eight views of New York steamboats by Dr. Higgins; a number of excellent 5 x 8 views by H. Tilden, a boy of twelve years of age, and made with a cheap outfit; a view of a lake steamer, and a group of ducks in water by R. Rohr, the latter being an uncommonly fine piece of work. Among the other pictures we noted "Peekskill Creek," by Dr. P. H. Mason, a little gem of fine work; an instantaneous view of a locomotive by H. Bull, Jr.; and a mosaic of some uncommonly pretty studies by W. H. Bartholomew.

W. H. Schieffelin showed prints from many subjects—views, portraits, and groups. Among these we noted a gem of Pontresina Bridge, in Switzerland; a characteristic group of miners, called "Three Gentlemen of Montana;" and a view of Prof. Chandler's laboratory at West Hampton, L. I.

F. McM. Stanton exhibited a number of 5 x 8 views of Catskill scenery, showing fine artistic taste and much skill in the production of the pictures. A view of the Geological Museum of Columbia College was a very fine interior. "The Waterfalls near Peekskill" was a very pretty subject, and well caught. A number of instantaneous views of tugs, steamers, and sailing-boats, showed considerable skill in this direction. Two prints, a cat and a dog, were very well caught; while two portraits taken with an E. A. lens were very good indeed.

Dr. H. T. Vulté showed a number of views. A Bridge on the New York, West Shore and Buffalo Railroad was very good; so also was the view of Walkill Cement Mill. A group of college boys was excellent. A number of portraits, groups, and interiors were all pretty uniformly good, and need no special mention.

Henry C. Bowen was particularly happy in a number of cloud pictures taken at Alexandria Bay. These prints showed a number of beautiful effects in light and shade, and were very well done. A curious and interesting picture was a view of foliage in a wind-storm—the effect was very striking. Another interesting print was a picture of a sunset.

Professor C. F. Chandler exhibited a number of views around his summer home on Long Island. All were very good. The pictures of the trees were fine pieces of work. Views of the house were also excellent, and a group on the porch was more than ordinarily good.

Alger C. Gildersleeve had his exhibit marked as a cheap E. A. outfit and Stanley plate work. It consisted of views, groups, interiors, architectural work, and waterfalls. The whole exhibit was good work, but we noted nothing that calls for special comment. All the pictures showed good artistic taste and photographic ability.

E. W. Frazer had a number of views, surf pictures, natural history studies and two portraits. The pictures showed great care in the selection of subjects, and were particularly good, especially the portraits, which were greatly admired.

Dr. A. P. Hallock exhibited an excellent instantaneous view of the steamer Albany, a number of pretty views in the Catskills, several interiors that were very fine indeed, and a number of architectural pieces. But there were two pictures in this exhibit that engaged our attention. One of these was a view of an immense gas-meter, used by one of the New York works to measure the gas flowing into the street mains. This is a dark black object in a large room with only side light, and an uncommonly difficult subject to photograph. Yet this print is very clear and sharp, and shows an amount of detail that we could scarcely believe it possible to obtain under such circumstances. The other picture we admired was a view of "Old Schooner on Peekskill Creek." This showed a remarkably fine reflection in the water, and the whole picture was wonderfully artistic.

John Slade exhibited a number of views taken around the lower end of Manhattan Island. In these the water effects were particularly good, pictures of boats, yachts and ferry-boats being very striking; also, a view of the Fort at Governor's Island.

C. H. Simmons showed some large interiors that were quite well done. A group of college boys was good, as were also a number of other groups, portraits and views.

We have not space enough to do justice to the good work of the exhibition, and the same is true in regard to the poor work. In the latter case, we strongly recommend some of the members to take more care with printing and toning; some of the pictures were exceeding poor prints, and wretchedly toned. Another point is the careless manner in which the prints are finished. It is just as important to have a nice mount and some taste about it, as it is to get a clean, sharp print. Some of the prints and mounts were excellent, and serve as good models to the less careful exhibitors. We hope that the next exhibition will show improvement in this direction, as we have no doubt it will. We understand that the present exhibit was collected in a great hurry, and this is probably the cause of many of its faults.



## THE MAGIC LANTERN AND ITS APPLICATIONS.

BY L. H. LAUDY, PH.D.

(Continued.)

*Phantasmagoria effects*, first credited to Cellini, are produced by moving the lantern gradually backward and forward behind a muslin screen, thus diminishing or enlarging the object at will. The lantern is usually carried in one arm, focusing during the motion with the other hand, thus rendering the picture upon the screen always distinct.

The construction of the lantern for this purpose does not differ from the ordinary one, as any lantern can be used. If gas is used, care should be taken to see that the rubber tubes conveying the gases are not stepped upon, and are long enough to reach to back of stage or room.

The lantern is sometimes placed upon wheels and the focusing is accomplished by rods or levers connected with the thumb-screw of the objective, which slides in the tube. I am of the opinion that the required effects can be as efficaciously produced by the hand adjustment, doing away with this needless and expensive mechanism, which at times fails to operate.

With a careful selection of pictures—the best suited are silhouettes and comic slides—this can be made to contribute largely to an evening's entertainment.

*The Sciopticon* was among the first in which a double-wick lamp was used, a new departure in the method of illumination and a great improvement over the single flat wick or argand burner. It has a small semicircular body which adds to its lightness and portability. The great objection to the use of two wicks is the dark shadow crossing the illuminated disk in a vertical direction. For views it is hardly perceptible, but for outline pictures it is visible at all times. To overcome this difficulty the wicks are sometimes placed diagonal to the axis of the condensers. This has a tendency to reduce the shadow and to some extent the intensity of the illumination. A difficulty is that unless the air supply is carefully regulated the flame is more likely to fork.

*Triplexicon*.—This lantern is furnished with a lamp having three large wicks

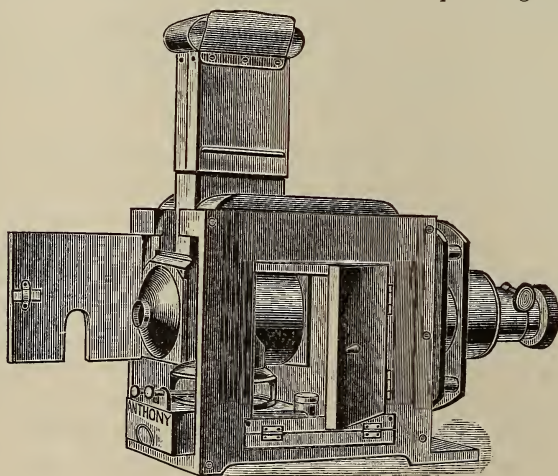


FIG. 10.

which removes the dark central vertical line seen with those having two wicks. The three wicks give a bright, flat disk of light, evenly distributed over the entire

circle, which has secured for it an unexceptionable reputation. Its optical construction is of good quality, and it is in all probability the best oil light lantern used at present. Its novel method of air supply and ventilation reduces the heat to a minimum. (See Fig. 10.)

Various other forms of oil lanterns are manufactured, some with four and even five wicks, but my experience has been that they add little to the intensity of the light, but largely to the heat, which is a serious drawback to their general introduction. They are included in the pamphengos, aphengoscope, euphaneron, pantaphane, solagraph-cyclexicon and photogenic. All of these depend mainly upon an oil lamp with from two to five wicks as a source of illumination. In some cases they are so arranged that a gas jet may be substituted for the lamp, which is often found a great convenience.

For a circle of six or eight feet the oil lamp will give good results, and is well adapted for home or class projections. If intended to exhibit in a hall or large lecture-room I would advise the use of the oxy-calcium jet, which will illuminate a circle of twelve feet. If any larger circle be required, then introduce the oxy-hydrogen jet.

We now come to a curious and somewhat novel style of lantern, which at the time of its invention, in 1847, seemed to promise well, for it involved a new principle for lantern projection. It made use of a well-known principle in physics—the total reflection prism, which was first applied by Sir Isaac Newton, instead of a plane mirror for reflecting telescopes. The principle is, that if we use a glass prism having an angle of  $45^\circ$ , or a right angle prism, rays falling on the face will be reflected as if it were a plane metallic mirror; for whatever be the refraction which they suffer at the entrance face, they will suffer an equal and opposite one at the emergent face. The value of such a prism is that the rays of incidence fall at an angle greater than that at which total reflection commences; and, therefore, *they will all suffer total reflection*. A portion of the light, however, is lost by reflection at the two surfaces, and a small portion by absorption of the glass.

The application of this to the lantern was first made use of by the Rev. St. Vincent Beechey, and he called it the *Prismatic Dioptric Dissolving Apparatus*. The prisms were mounted in front of the objective, and could be moved so as to reflect the image to any particular position. The advantage claimed by the inventor was that it possessed less compass than the ordinary lantern, and yet had the power of two combined in one. With the use of one lamp, which was upon the ordinary fountain-lamp principle, with a circular wick, a small lime ball was suspended in the apex of the flame, upon which impinged a supply of oxygen gas. An intense light was produced, supposed to possess sufficient illuminating power to cover a twenty-foot circle. It was simple to manage, and the consumption of gas was small. Had these anticipations been realized, it would have been a great success, but, unfortunately, the lamp was a failure, together with the large amount of light lost by absorption and reflection from the outer surface of the prisms, while the cost of the apparatus was not less than for two lanterns; for these reasons the apparatus was not a success, and was soon lost sight of.

The *Trinoptric Lantern* differs but little from the original idea of the former, with the addition of a tube in the center, carrying an objective, without a prism,

directly in front of the lantern, which combines the powers of three lanterns in one with the use of a single lamp, the same in principle as used in the dioptric, with the exception that the lime ball is omitted. By means of this lantern the three disks from the prisms may be thrown either altogether on one circle or united at various distances on the screen, to form one panoramic picture, thus producing all the effects obtained by the use of three lanterns.

*Prismatic Binoptric Lantern.*—This is essentially the same as the other two, the only addition being a third prism on the central objective. To all three a system of mechanical dissolvers was attached, for the aim of these lanterns was to produce dissolving effects by means of one light and the total reflection prisms.

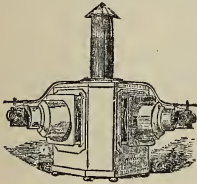


FIG. 11.  
DIOPTRIC LANTERN.

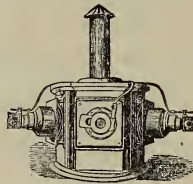


FIG. 12.  
TRINOPTIC LANTERN.

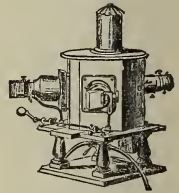


FIG. 13.  
PRISMATIC BINOPTIC  
LANTERN.

In looking over some old catalogues, which were published over forty years ago, I was fortunate enough to find some illustrations of these curious lanterns, which are reproduced, and will give the reader some idea of their construction, as well as the attention that was given to the lantern at this date, 1847. Their only value at present is historical. (See Figs. 11, 12 and 13.)

*Keevil's Lantern.*—This is only a modification of the others, with the exception that the jet is arranged on a pivot, and by rotating it through about a quarter of a circle the light is brought in the axis of the condensers alternately, and at the same time the mechanical dissolver opens and closes the objectives.

*Biunials.*—Lanterns mounted one above the other are designated as *biunial*. Many designs of these are to be found in foreign catalogues, principally of Lon-

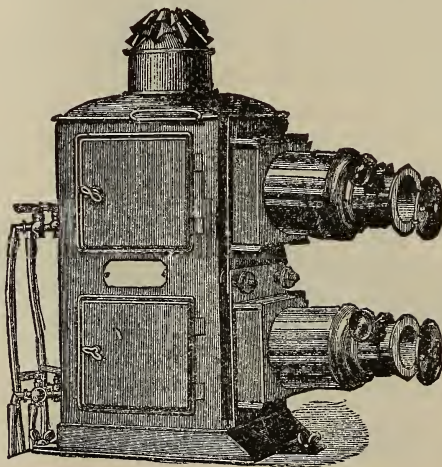


FIG. 14.

don make. (See Fig. 14.) A few are in use in this country, some of which are so mounted as to be removed at will and used as a single lantern.



The great point in their construction is to insure perfect ventilation, which is produced by means of a side flue from the lower lantern, the upper one being ventilated in the usual way from the top.

*Triunial; or, Triple Lantern.*—This form of lantern seems to be in favor in England, and is used to some extent in this country. (See Fig. 15.) The advantage of a third lantern is for producing some pleasing effects, among which are

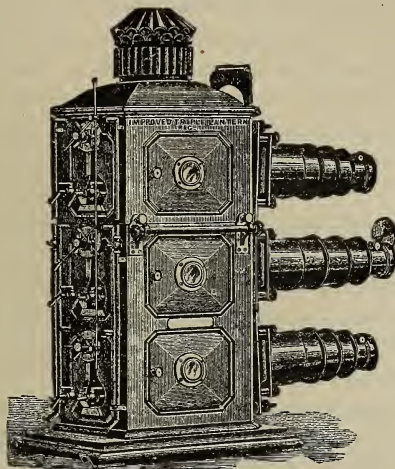


FIG. 15.

the change from day to night; summer to winter; formation of rainbows; lighting; storming of forts; and many other things, as the introduction of statuary and tinting, and movable or panoramic pictures.

At the Royal Polytechnic Institute as many as six lanterns were used for the projection of effect slides.

*Polyopticon; or, Wonder Camera.*—The object of this apparatus is the projection of opaque objects upon the screen. Heretofore we have spoken of transparent objects shown by transmitted light; now we have to deal with opaque objects, many of which are highly interesting—as minerals, medals, casts,

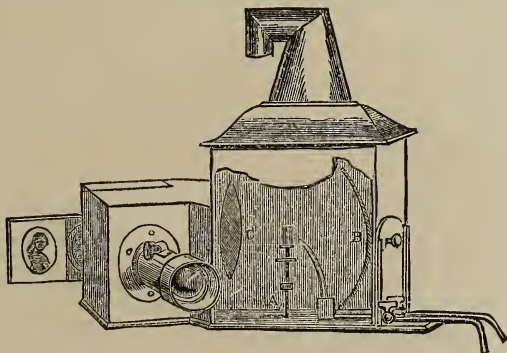


FIG. 16.

flowers, photographs on paper, engravings, the delicate mechanism of a watch in motion, and many other things, can in this way be projected with fairly good results. It meets with general favor, because it reflects natural objects in their natural colors.

It is simple in construction, and in the toy form is merely a light with a reflector, a frame to hold the object, and a single plano-convex lens to enlarge it. In the more perfect apparatus it is so arranged that it can be attached to the ordinary lantern by removing the objective so that the light from the condenser may impinge upon the object (which must be highly illuminated), then, through the objective (which is placed on the side of the angular box, joined to the condenser), and then projected upon the screen. When illuminated by the oxy-hydrogen light, very satisfactory results may be obtained. (See Fig. 16.)

Besides being used as an amusing toy, it has found application to some extent by artists to enlarge with, as a photograph may be used direct.

The cheap toy instruments are not to be relied upon for any satisfactory effects, as the source of illumination required is far greater than produced by any oil light.

*Megascope.*—This apparatus is a more refined wonder camera, and finds certain application for the projection of opaque objects. We must not try to substitute it for the lantern, or we shall be disappointed, for it is of necessity vastly inferior to the lantern in sharpness and definition and flatness of field, while in amount of illumination it is enormously behind. It is only used for a few experiments which cannot be shown otherwise, and if constructed cheaply will be found of much interest, and at times a source of useful service.

To produce the best effects a large lens of long focus, with two oxy-hydrogen lights, and a large box, well ventilated, must be used. This apparatus became an important factor in the Continental Bank case, which was tried in 1877, as by its means a forged and original check was enlarged and projected on a ground glass screen visible to the entire jury.

#### *Photography a Detective Agent.*

In 1877, on the trial of the suit brought by Austin, Black & Co. against the Continental Bank to recover some \$60,000 on a check upon the bank, the certification to which by A. H. Timpson, the paying teller, was alleged to be a forgery, some interesting photographic experiments were made in the presence of the jury with a view to determine the fact of the certification in question, and Judge Van Brunt, who held the Supreme Court Circuit. After being on trial for nearly three weeks, the defence closed their case by offering the testimony of Professor Chandler, of Columbia College; Professor Laudy, of the School of Mines; and Professor Morton, of the Stevens Institute. These gentlemen, from photographs taken of the check in dispute and other checks, the genuineness of whose certification was undisputed, indicated what they claimed to be differences in the writing. In order to give ocular demonstration to the jury, a megascope, using two oxy-hydrogen jets, was made use of, the room being properly darkened for this purpose. It was quite a novel exhibition in a court room, as well as a beautiful illustration of the efficacy of scientific knowledge in legal investigation. Upon a large ground glass were pictured mammoth copies of the check in dispute and other checks, and then still more magnified portions of the same checks, thus enabling the jurors with their own eyes to trace out line by line and curve by curve all the angularities and sinuosities of the photographic checks thus presented to view.

*(To be continued.)*

## AN INTERESTING LETTER.

*To the Editors of the BULLETIN.*

IN a recent number of the BULLETIN I notice one of your correspondents asks for a method of applying paper upon tin plates or glass in such a way as to prevent expansion under the action of the paste. This is a question frequently asked, and very few persons understand any method for doing it successfully.

If one has at hand some old and rather thick negative varnish, they can flow the glass, metal or tin plates with it, and when it has become tacky, the paper can be placed upon it and rolled smooth with blotting-paper. If thick varnish is not at hand, decalcomanie varnish can be used for the same purpose—copal, mastic or ordinary coach varnish will answer. I have in some cases given the plate a coating of sealing-wax or bees-wax, and then heated it until it was sufficiently sticky to make the paper adhere. In this way paper can be applied without the least trace of swelling, and will be firmly fixed. For some purposes "gold size" varnish, as it is called, which can be obtained at any paint store, will work nicely. The kind that dries in about twenty-four hours is best for the beginner, as it gives ample time for him to learn how to manipulate properly.

In the December number, S. C. B. speaks of being unable to unite the two views of a building in such a way that the sidewalks in front come together properly. In the nature of things, even though the camera be properly level and exactly in front of the building, two views cannot be taken which will unite perfectly if the lens be truly rectilinear and of short focus. The reason for this is found in the nature of perspective itself. Place a person in front of a building long enough to extend in both directions to the vanishing point and he will see but two straight lines; all the others will be portions of circles. One of these may be a vertical line opposite the eye and the other will be a horizontal line at the level of the eye. This is the "horizon" line of the artists. These lines will be shown correctly in a camera intended to take photographic panoramas. The rectilinear lens in the nature of things cannot produce panoramic representations or pictures which are capable of joining, unless it be of such a long focus that its imperfections due to rectilinearity are imperceptible. The rectilinear lens, especially of short focus, produces an enlargement of the picture towards the edges of the plate. This enlargement is due to the greater distance of the margin of the ground glass from the lens than the center, and the consequent greater focal length of the marginal rays. To make a perfect panoramic image, the lens must be specially ground so as to cover a small portion of the plate, and then when the exposures are made, the plate must constantly be moved so that every portion of it is placed successively in the focus of the lens. If S. C. B. wishes to produce a panoramic representation of his wide building, his camera must be revolved around the optical center of the lens, and the successive pictures must cover considerably less than the whole plate, otherwise I think he must expect, as a matter of course, that the portions instead of being united by a true curve will present angles. His trouble arises not from the fault of his lens, but from the "eternal nature of things," which makes it impossible to do what he wishes to do with the means at hand.

Another correspondent asks what you think the best covering for a traveling photographic car. My experience in this line may not be worth much, but I fancy that, all things considered, nothing can exceed good heavy duck, put in



place after being painted on the under side, and tacked down with common tin carpet tacks. Then give the upper side several coats of linseed oil and yellow ochre. Do not paint it a dark color unless you want to have a nice little furnace in the summer season. I never tried cotton duck on the side of a building, but see no reason why it should not answer as well as on a roof. If the roof is of tight boards and in good condition, a thinner grade of duck, or even heavy muslin, might answer very well. An occasional painting is all that is necessary to keep this kind of a roof tight. A cotton roof is not as cheap as tin, but is more easily repaired—with a pot of paint, a few tacks and a piece of cloth, any hole that may come in it can be made tight. A little job of this kind can be done in a few minutes without aid from the tin shop.

W. E. PARTRIDGE.

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### A PLEA FOR THE MANUFACTURER.

*To the Editors of the BULLETIN.*

WHETHER it is because they have been sat on so thoroughly that they are unable to respond, or for some other equally weighty reason, I am unable to say, but it is a fact that the manufacturers of photographic materials, plates, etc., have maintained a silence no longer golden, have exercised a patience no longer a virtue, while writers, more or less competent, have criticised, blamed, cursed and, but very occasionally, praised them. It seems to me time for some one to champion this much abused and long-suffering class. Now, I am not going to offer myself as a champion; what I have to say is intended simply as a call to the rescue. Like all true Americans I cannot help sympathizing with the under dog, but a couple of black eyes, a broken nose and well-bruised body generally, taught me early in life to carefully "size up" the top dog before going to the rescue of the under one. So I'm here to "sic 'em," not to fight.

If a man makes a failure in one business, he seems to become possessed with an idea that he is the better fitted to criticise and advise those engaged in any other.

It was, perhaps, for this reason that a gentleman recently felt called upon to give his advice—at so much a line—to the manufacturers of dry plates, and it was this, as much as anything else, which induced the writer to endeavor to persuade some one, better fitted than he, to enter the lists in behalf of the manufacturer.

Now, to honest, sober, unbiased criticism no one should object, but to hot-headed, dogmatic, petulant fault-finding, no journal ought to devote space. A suggestion from any one—even one who knows nothing of the business—may be of value and at least deserves consideration, but it is hardly good taste for a man to grow cranky and spiteful because his suggestions are not followed.

Manufacturers have neither the time nor inclination to write long articles demonstrating the impracticability of these same suggestions, many of which are as old as photography, and of as little value as "two tails to a cat."

Many, while of value, would add too much to the expense of manufacture.

In this connection I would call attention to the fact that many of the articles containing these valuable suggestions end in about this way: "To do this would add but little to the expense, say four or five cents to the box, and would certainly be worth the difference." Now, laying aside all consideration of the

question, if four or five of these four or five cent suggestions are followed out, how big a hole will it make in the profit? Let us remark the suggestion that even a fraction of a cent added to the cost of manufacturing—a dozen plates for instance—deducts a very considerable amount from the profits at the end of a year. Again, bear in mind Sir Suggester, this little fact: A thing may work very satisfactorily on a small scale, as you have perhaps demonstrated, which will not work at all on a large scale. One more pointer, and I am done. Remember that there is a possibility that the man who has been in the business for years may know a little more about it than you, who have been a looker on, perhaps for months. Come on with your suggestions, come on with your complaints, they are needed and appreciated, but don't condemn a manufacturer as lacking in enterprise and his goods as worthless, because he does not comply at once with your ideas of what is the proper way to work.

He has experimented as well as you, and is striving to give the best satisfaction to the greatest number.

NOT A MANUFACTURER.

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[From the *Scientific American*.]

### A SUBSTITUTE FOR GLASS IN PHOTOGRAPHY.

(Continued.)

WE will assume that a number of exposures out of the twenty-four have been made, and it is desired that they be separated and removed from the supply spool for the purpose of development; taking the holder to the dark room and removing the outer case, we sever the exposed portion of paper on the reel and on the exposing platform by simply drawing the point of a knife lengthwise on the measuring guide roll in its metal-lined groove (see Fig. 2).\* By counting four dots from the end, we come to the end of one exposure. The paper is next drawn by the hand to the right until the fourth pair of dots are brought over the groove, when the sheet is readily separated as before. Instead of cutting off the exposed sheets in this manner, they may be severed by shears. The reel containing the exposed paper may be bodily removed from the frame in the same manner as the supply spool and another inserted, and the unexposed paper attached to it, as in Fig. 5, when new exposures may be wound upon it as before.

The spring pressure rollers bearing upon the back of the paper when on the spool or reel prevents the uncoiling of the paper on the same, and thus obviates the danger of abrasion by the loosening and tightening of the paper on itself.

In holders of small size, three clicks and punctures are made instead of four for one exposure; in large sizes as many as five or six. All the parts of the holder are made interchangeable, on the plan of the sewing machine, mowing machines, etc., thereby making the repair of any damages a very simple matter.

It is obvious that the most compact and convenient way of using this paper is by means of the roll holder and the spools, for on account of their lightness they can be readily sent in the mails, at small cost, to various parts of the country. But in cases where it is inconvenient to use a roll holder, a special carrier has been devised (see Fig. 8),† for supporting single sheets of the paper in the ordinary double holder used for glass plates. The carrier consists simply of a thin wood support or plate, built up of narrow strips of wood to

\* For cuts see Bulletin, page 87.

† *Ibid*, page 118.

prevent warping, constructed like the exposing platform in the roll holder, and has a thin metal mat or frame, which is bent up around the edges, and clasps the plate when it is pressed into it. In Fig. 8 the wood carrier is held in the hand, while the metal mat lies flat; above it may be seen the sheet of paper, one end being partly curled up.

In order to secure the paper to the carrier, the frame is laid down upon a clean sheet of paper and the sheet of negative paper laid, face down, into it; the wood plate is then pressed down on top of it, and the ends of the frame, springing over the rounded edges of the wood carrier, hold the paper firmly and smooth against the carrier. As the thickness of the carrier and mat combined does not exceed that of the average glass plate, it can be put into the ordinary plate holder for exposure in the camera. After exposure, the paper is removed from the carrier and developed in the ordinary way.

The advantage of the lightness of the paper over the weight of glass is especially noticeable in the larger sizes, as, for instance, an entire outfit taking twenty-four 8 x 10 pictures, which includes a camera, lens, tripod, carrying case, and roll holder, weighs less than twenty pounds; whereas twenty-four 8 x 10 glass plates weigh of themselves over sixteen pounds, while the wood plate holders weigh fully as much again; hence, as the roll holder loaded for this size weighs only about three and a half pounds, there is a saving in weight on the outfit of about 28½ pounds.

In other words, the amateur can carry an 8 x 10 outfit with less effort than was formerly expended on a 5 x 8 glass equipped apparatus.

The roll holders are made in all sizes, to fit any camera, and one of the latest improvements has been the production of a miniature holder, holding enough sensitive paper for 48 exposures, which is attached to a small detective camera, and used for making instantaneous pictures. One of the drawbacks in the so-called detective cameras has been the necessity of the amateur carrying around with him several miniature double plate holders loaded with glass plates, which weigh as much as the camera itself, and which invariably get out of order. With a compact apparatus like the roll holder, this difficulty is entirely avoided, and to the imagination nothing could be more perfect than a small, light camera fitted with a roll holder for one to carry around on his travels. The paper is always in position, and the labor of continually taking out and reversing the plate holder avoided.

The metal work of the holder consists mostly of brass blackened; every part is finely finished and substantially made, which reflects much credit upon the Eastman Company. In keeping with the metal work the outside mahogany case and its fittings are also highly polished, while the slide is made of the best vulcanite rubber.

The novelty of the invention, and the fine workmanship, were recently recognized at the London International Inventions Exhibition by the award of a silver medal to the Eastman Company. Their apparatus being the chief American photographic invention, naturally attracted much attention. So noticeable was this, that a long editorial article soon after appeared in the London *Times* describing the exhibit and the general interest in the process, the statement being made that a complete revolution of the present methods of photography must necessarily occur.



As the success of the apparatus depends largely upon the even quality of the sensitive film, it will be interesting at this point to describe its method of preparation.

The process consists in giving the paper a preliminary coating of gelatine sufficiently thick to give a plane surface to the paper, filling up all the depressions, and then in calendering the paper thus coated, so that it presents an absolutely polished surface to the sensitive emulsion, which is, as with the ordinary plates, based on gelatine. The paper is thus prepared in the roll 30 inches in width, and is then, still in the roll, coated with gelatino-bromide emulsion in a double application, the second beginning with the end at which the first finished, securing a general equality of the film which is not attained on glass as a rule, and at the same time obviating in the one application any defects which the other may have had.

We are informed that the machinery employed is large enough to prepare and coat a strip of paper 30 inches wide by 3,800 feet long. The advantages offered to the amateur by the use of a long roll of sensitive film in place of the old system of double holders, whereby large and panoramic pictures may be easily obtained of inaccessible regions, only limited by the size of the camera, will be apparent to any one acquainted with the practice of photography.

After the paper has been exposed in the camera, the sheets are cut off and developed, by a red light, in a dark room, similar to dry plates; but they possess a marked advantage over them, from the fact that several sheets can be developed at one time one above the other, in one developing bath, somewhat in the same way as silver prints are toned. The sheets are first wetted by immersion in a tray of water, and then placed face down one after the other in the developing solution, and moved about in the same until development is finished. They are then washed in water and fixed in a combined solution of hyposulphite of soda and alum, again washed and dried.

*(To be continued.)*

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## A NEW MAGNESIUM LIGHT.

BY F. C. BEACH.

[Read before the Society of Amateur Photographers of New York.]

*(Continued.)*

I HAVE two cameras arranged at the further end of the room. Upon one is a 14-inch Ross rapid symmetrical lens, and upon the other is a French Hermagis lens. One of the cameras was kindly loaned me for this occasion by Messrs. Anthony & Co., and the other, a Scovill revolving back, by Mr. Frank G. DuBois, one of our members. Both lenses are to be worked at their full aperture. Mr. H. J. Newton has also arranged a third camera next to the others for a  $6\frac{1}{2} \times 8\frac{1}{2}$  picture. In each of the two tin boxes are tapers of magnesium ribbon. The large one has 60 inches, the small one 48 inches.

Owing to its brittle and springy nature it is quite difficult to twist or fold the magnesium ribbon into a satisfactory taper, and I have ascertained by experiment that it will not do to have the strands too close together. They must be separated enough to permit the air to circulate in between them. I have tried making a taper eight inches long by placing the strips of ribbon alongside of each other and twisting around them at intervals of one and a half inches a piece of fine

wire. The taper when ignited would burn, perhaps, past two of the wire loops, but would suddenly go out when reaching the third, because that happened to be twisted too tight.

In our apparatus here we have a series of fine wire rings arranged one above the other, which simply serve as guides to hold the bunch of loose ribbon in place over the alcohol flame without in any way compressing it.

You will observe that both the boxes are connected by a rubber tube to an oxygen gas cylinder standing on the floor, near the side wall. A T-joint is arranged in the pipe so that the gas will be equally distributed.

From our new electric light bichromate battery, consisting of four large cells and named the "Aurora," located near the oxygen cylinder on the floor, are run two insulated No. 16 copper wires up along the wall, and thence over the suspended horizontal wire to the tin boxes, and are connected to the respective binding posts in each.

An open circuit key is placed upon my desk, arranged so as to close the circuit by pressing the key. I will first turn on the oxygen gas, then, with the word "Ready," will press the electric key, and if all proceeds as it should the picture will be taken. Mr. Hoover has consented to make the exposure, and will operate the two cameras at the same time.

Before concluding, let me call your attention to a second form of magnesium light which has been strongly recommended by Mr. W. H. Harrison, of London, and lately more fully explained in the *Photographic News*, of December 16, 1885. As indicated on the blackboard, you see it is simply an egg-shaped brass funnel, having an aperture in the bottom of about  $\frac{3}{16}$  of an inch in diameter, or equal to an ordinary sized pea. Just under the mouth of the funnel, supported on a retort stand, is an alcohol soldering lamp having a long, horizontal oblique nozzle, which allows the flame to come under the mouth, but permits the wick to be a trifle to one side; on the floor underneath is a pan to catch the waste sand. Some fine magnesium powder—about a thimbleful—(I have a sample bottle of it here, which I will pass around) is mixed with an equal quantity of fine white sand on a piece of smooth paper and well stirred with a stick of wood or with the finger. The alcohol lamp is lighted, and when all is ready the mixture is quickly dumped into the funnel and falls in a steady stream, on the hour-glass principle, upon the alcohol flame. The particles of magnesium are immediately ignited and a fine actinic brilliant flame is the result, which is more reliable, it is said, than the ribbon.

It will be my purpose to operate this form of light, independent of the other lights, as a sort of side light. It is an experiment easily tried, and will be interesting.

It has occurred to me that half a dozen of the powder lights could be very easily automatically and instantaneously lighted by arranging a small valve in the bottom of the funnel, to be operated by the armature of an electro-magnet. One set of wires could be arranged to light the alcohol wick of each lamp at the same time; then the other set, being connected to the several electro-magnets in a circuit, would, when the circuit was closed, cause the armatures of all to instantly withdraw the valves, and permit the powder in each funnel to fall at the same moment.

By this plan it would be possible to obtain a light of tremendous actinic

power, as the quantity in each funnel could be accurately measured and varied to suit the circumstances. If in addition it was desired to utilize the advantage of oxygen gas, it could be done by locating vertically, just under the alcohol flame, a glass tube two inches in diameter and three feet long. At the bottom the oxygen could enter and rise in a steady stream while the ignited powder was falling.

I also have a model of a Benjamin magnesium lamp, which is intended to unwind a coil of the ribbon as fast as it burns. Possibly many of you may not understand the principle of this lamp. For your information, let me say that, in the first place, the coil of magnesium is secured to a removable reel at the rear of the lamp, and the ribbon is unrolled and passed forward between two feed rolls, running through a tube at the front, coming out just before the center of the reflector.

The mechanism, which is simply a clock movement operated by the usual clock spring, is so controlled and balanced that it will cause the feed rolls to rotate only as fast as the magnesium ribbon is consumed, so that we have a means of keeping up a steady magnesium light so long as we feed out the ribbon or keep the mechanism in motion.

In this particular machine, a vertical worm-screw shaft is made to rotate by an open spur wheel, and a removable weighted fan is set on the upper end of the shaft. If this fan is removed, the shaft will revolve with great speed. But the fan checks and regulates its motion so that the speed of the feed rolls shall not be too rapid.

The fan is so heavy that when the mechanism is started it goes slow, but as its momentum is overcome the ribbon is fed out faster than it burns, and it is difficult to regulate it. In addition to this, the rapid revolution of the heavy fan vibrates the apparatus.

I have seen a much more compact machine, sold by Eimer & Amend in this city, which is regulated entirely by a light fan, and am told that it operates perfectly.

At present one of the serious drawbacks to the use of magnesium is its expense; but I believe if manufacturers could understand its useful application as an aid in making photographic pictures, they could, by making and selling larger quantities, very materially lower the price.

Should the experiment we are about to try prove successful, the plate will be immediately developed in the dark room, and, if time permits, from the negative, while wet, a positive bromo-gelatine print on Eastman's paper will be made, with a brief exposure, either by the light of a match or the gaslight. This will be passed around for the benefit of those members who would like to see how they appear under a magnesium light.

Thanking you for your kind attention in listening to my somewhat lengthy and technical remarks, I close with the hope that the experiments I have suggested may be the means of imparting to some of you ideas, which, when worked out, will result in giving us a perfect magnesium light,

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INDIANAPOLIS, IND., February 12, 1886.

GENTLEMEN,—Please renew my subscription to the BULLETIN.

It is the duty of every photographer to support the literature of his profession, and the claims of the BULLETIN are undeniable.

Truly yours, W. H. POTTER,  
*President of the Photographers' Association of America.*



# THE IMPROVED AMERICAN PERMANENT BROMIDE PAPER.

BY F. C. BEACH.

[Read before the Society of Amateur Photographers of New York.]

(Continued.)

By immersing the print, after the hypo has been eliminated, in a 5 per cent. solution of water and glycerine, then removing it and slightly draining, it will dry flat, without curling. If it is desired to impart a fine gloss, it is only necessary to squeegee the print, film side down, upon a sheet of hard rubber, a point I spoke of at a previous meeting. I have had a sample of the paper squeegeed on the rubber, and will show you how easily it is stripped and what a rich gloss it possesses.

[Mr. Beach then pulled off three  $6\frac{1}{2} \times 8\frac{1}{2}$  bromide prints from a large rubber sheet and passed them around.]

If glass is employed, a little oil must be rubbed over its surface before the print is laid on. By this easy process of polishing, you will notice the prints look as highly finished as if made on albumenized paper. It is very certain that a bromide print is also more permanent than a common silver print, for the reason that it is obtained by the same process as that used in making the original negative.

Having now explained a few advantages of the paper, I will briefly direct your attention to the apparatus employed for enlarging. The most common instruments will suffice, but the main elements are, however, a good light, a good reflector, possibly a common bull's-eye lens for a condenser (but this may be dispensed with), and a good short-focus portrait lens. You can arrange these in any suitable box and obtain excellent results. Either a camera such as you use for field work can be utilized, or an ordinary magic lantern.

[Mr. Beach then illustrated the working of his improved apparatus, described in 1884.]

When a kerosene light is used with a condenser, the exposure varies from 15 to 60 seconds and sometimes longer, according to the density of the negative and the size of the enlargement, which latter is varied by adjusting the lens nearer to or away from the negative. The exposure to-night (which is to last 15 seconds) will be made by the oxy-hydrogen lime light in the society's lantern, the latter having been specially constructed to adapt it for enlarging.

I have extended the bellows support further forward in order to accommodate the extra long focus of the 14-inch Ross Rapid Symmetrical Lens, which we used the other evening when taking the magnesium light picture. You will observe that it requires to be at some distance from the enlarging screen, and, as I intended, permits a better view of the enlargement by the audience when it is progressing. Ordinarily it is better to employ a shorter focus lens of the portrait combination order, with a rack and pinion adjustment for fine focusing. In this case we focus on the white card on the face of the enlarging screen by moving the lens front forward or backward as required, which I will illustrate more fully after the demonstration is finished.

I have a  $4 \times 5$  negative which I made last summer, the exposure having been nearly instantaneous, and the time towards five o'clock in the afternoon. I have this arranged in front of the condenser. The size of the head on the negative is half an inch, while that in the enlargement will measure about  $2\frac{1}{2}$  inches.

[Mr. Beach then threw the picture on the enlarging screen; the subject was a year-and-half old, curly-headed baby, seated in a high chair on the piazza of a building.]

Fitting over the lens I have a cap of ruby glass, which enables us to adjust the sensitive paper properly on the screen without injury.

I shall work the lens at full aperture. I now desire to direct your attention to the very handsome and serviceable enlarging easel, which is quite new, and has been voluntarily presented to this society by the Eastman Dry Plate and Film Company. (I will operate it and explain it more fully after the demonstration.)

It possesses a number of advantages which will be apparent as soon as shown. In the first place it has a square base frame, with small pegs on the bottom acting as feet, which set on the floor; from the frame rise two uprights having longitudinal slots in their upper ends, and on their inner faces are longitudinal grooves in which the screen slides. Two thumb-screws, one in each support, with suitable washers, hold the screen at any desired height. In front of the screen is a black, hinged clamping frame, opening like a door, fastened by a light-spring catch, and in this frame may be put kits of smaller sizes. Supported by suitable brackets at the top of the easel is a long, square, rectangular box, labeled on the front, "Open in yellow light only," which is cut diagonally across the square, making two halves, the upper portion being hinged at the top so that it may be opened just at the top of the screen.

In the box is the roll of sensitive paper, supported on a spool holder, and tension is given to the paper by the usual pressure spring employed in the roller holder.

Those of you who have experienced the annoyance and delay in cutting off a sheet of sensitive paper from the roll and pinning it to the screen, will at once appreciate the advantage this easel presents.

Your paper is kept unexposed on the spool in the box; after the focus has been obtained, you put on the red cap over the lens, unlatch and open the hinged clamping frame, throw back the latch hooks which hold the box closed, open the cover and quickly draw down the sensitive sheet over the exposing screen (it easily unwinds from the roll), then you close upon the paper the clamping frame, latch it, and your paper is as flat and smooth as may be desired. You make the exposure; then, with your knife cut off the exposed sheet, while clamped, open the frame, remove the exposed sheet, open the cover of the box, and at once the loose end of the roll flies up and in.

By having smaller kits to fit in the clamping frame, smaller sized rolls can be used; and not only that, cut sheets can be used instead of rolls if desired.

But it is evident that we have in this easel a most useful adjunct in making enlargements, a help which is a real gain, and something so thoroughly and admirably made that it will stand long service and be a great convenience to all who have occasion to use it.

I must congratulate the Company who have designed and gotten it up, and also thank them for presenting it to the society. We shall all enjoy using it.

Having now explained to you the apparatus, I will close with the hope that many of you will take up this most interesting branch of photography, enlarging, and show us some of the results at our future exhibitions.

[From *La Nature*.]**HOW PHOTOGRAPHIC DRY PLATES ARE MADE.**

BY GASTON TISSANDIER.

(Continued.)

3. *Drying the Glasses.*—At the end of the table the glasses are taken and placed in the drier (Fig. 2). It is composed of shelves of wood in an apartment which has a ventilation seldom applied until now. The air from outside is

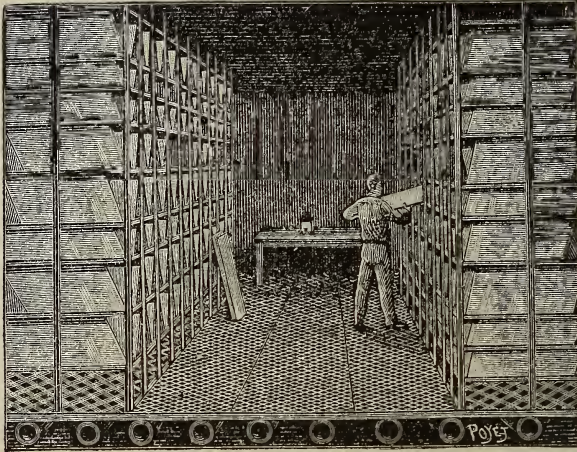


FIG. 2.

made to traverse a pad of wadding, and is heated on the tubes where steam circulates under the double floor of the drier. After being thus heated, it rises in the four corners of the apartment as far as the ceiling, to spread afterwards to all parts of the place. Under the shelves, and on each side, are found screens which allow the air to escape by draught into the chimney of the factory, which is 24 meters high. As the hot air coming in above descends, it is charged with the humidity produced by the drying of the plates. In this manner there is little or no dust, and the plates are placed with the emulsion-face downwards.



FIG. 3.

4. *Cutting the Plates.*—After drying, that is to say six or eight hours after



putting them on the shelves, the plates are carried to the cutting room. By the aid of a very simple machine, managed by a single worker, each plate is cut to the desired size (Fig. 3). This machine is composed of two strips of wood, which can be fixed at the desired width by means of screws. As we have indicated, the exact width of the large plate is determined before the coating. It is introduced into the slide and stops at a point fixed in such a manner that the distance between the rule which guides the diamond and a catch which stops the glass, determines the size necessary to give the small plate, which is then cut by the aid of the diamond.

During the cutting the glasses are examined one by one, by other workers. Those which are faulty are rejected, while the others are sent to be packed.

5. *Placing in Packages.*—The machine for packing (Fig. 4) is composed essentially of three grooved parts. Those underneath pass below the level of the table and have six grooves. Small paper quills are previously fixed exactly in these grooves. On each side of the grooves below rise two other movable vertical plates of grooves which correspond to the divisions of those of the table.

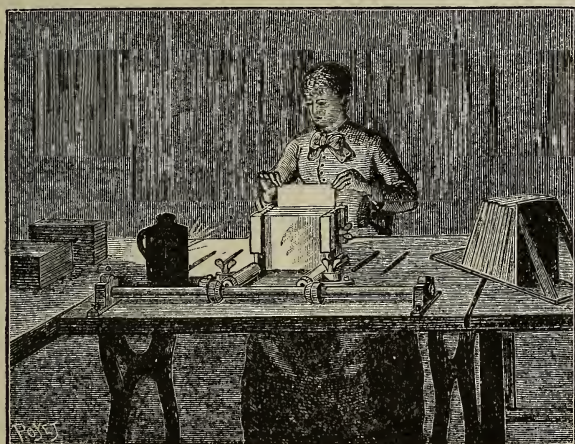


FIG. 4.

The glasses are introduced one by one into the grooves, and when there are six, paper quills are placed above; that done, the base, by a mechanical movement, descends below the level of the table at the same time that the two vertical plates are laid down. The six plates are then squeezed together by the worker, being separated by the paper quills. They are then packed and two packages are placed together in a box. A band of paper is pasted over the openings of the boxes, which after this operation may be taken into daylight.

All this manufacturing demands great care and considerable order. Mr. Hutinet remarked to us that to combat the heat of summer while coating the plates, he had been obliged to place a small coil above the plates which are still uncongealed, and that this coil was supplied with water of  $12^{\circ}$  C., provided from a well which he had to bore 40 meters deep.

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HAVE compared your magazine with others, and in my judgment it is the best.

CLARENCE STANHOPE.

## OUR ILLUSTRATION.

THE following letter from J. J. Higgins, M.D., explains how these interesting pictures were obtained:

MY DEAR SIRs,—The negatives I send you for illustrating the BULLETIN, were taken by me on your regular Stanley Plate that I purchase of you by the gross, size 5 x 8. They were developed with the ferrous oxalate developer, instead of pyro and alkali, disproving the commonly expressed belief in this country, that ferrous oxalate is unsuitable for instantaneous work and that alkaline pyro must be used. On the Continent opinions and practice are otherwise. It is said by the advocates of pyro and alkali, that in its use, one is able by increasing the strength of the developer (by adding alkali usually) to obtain his picture. They should finish the sentence by the addition of two words—*or fog*. With ferrous oxalate however, no such addition is necessary. Commencing with a minimum or medium strength you increase to a maximum, and that without fear of fog, Furthermore this *maximum* can be left upon a plate for hours steadily doing its work. I have repeatedly divided a plate exposed on these steamers, and the half developed with ferrous oxalate was all that could be desired; while the half subjected to pyro and alkali was thin and worthless. And from persons having far more experience and adeptness than myself, I have heard it said that such instantaneous work could not be done with pyro and alkali. Again, with ferrous oxalate there is no liability of losing or spoiling a plate, so common in the use of strong alkali and pyro. Of over a hundred negatives that I have taken of various steamers under full headway (identical with those I send you) never have I found it necessary to use saturated solutions of the *maximum* strength. I have always well restrained my developer with *bromide*, and never lost a plate from want of power in the developer—or from fog.

You will please note that in all cases the exposure is made as the steamers are passing *directly across* the field, and not as they were coming head on to or again going away from the camera; there being a wide difference in the two varieties of exposure. Also, their proximity to the camera instead of being away off in the distance. Where I reside (and make the exposures) the East River is divided by Blackwell's Island into two narrow halves, and the distance from the shore anything but great—probably some two or three hundred feet.

The time of day is usually quite late in the afternoon, my professional engagements seldom allowing me to return to my house before 4 P.M., and most of the Sound steamers not leaving their piers till about 5 P.M.

The Pilgrim was taken at a *quarter to seven* in the evening.

The lens used was the rapid rectilinear, having an equivalent focus of  $10\frac{1}{2}$  inches. Size of opening in diaphragm,  $\frac{7}{16}$ -inch; focus,  $f=24$ . The speed of shutter was the quickest of the Prosch Eclipse.

If, instead of the regular Stanley plate upon which all of my instantaneous negatives have been taken, one should use his new extra rapid lightning plate, it would not be well to diaphragm down so as to get less exposure, as thereby the brilliancy and atmospheric effect will suffer and a flat and characterless print result; but rather to still further weaken their oxalate developer, or what amounts to the same, make use of alkaline pyro.

[All who have seen these remarkable pictures are amazed at the brilliancy of the work and the beauty of the details.—*Editors of BULLETIN.*]

# ANTHONY'S Photographic Bulletin.

EDITED BY

Prof. C. F. CHANDLER, Ph.D., LL.D.,  
Aided by ARTHUR H. ELLIOTT, Ph.D., F.C.S.,  
and a corps of practical assistants.

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*E. & H. T. ANTHONY & CO., Publishers.*

## PITTSBURGH AMATEUR PHOTOGRAPHERS' SOCIETY.

THE Amateur Society met in their rooms 59 Fourth avenue, on January 11th. *President* MURRAY in the chair. Minutes approved as read.

The *President* announced that W. S. Bell had taken a large negative of Hampton Battery Monument; that the members of the battery wanted copies of same, and that Mr. G. V. Marshall would give one dollar for twelve prints of same, which amount Mr. Bell would donate to the society, as Mr. Bell did not want to sell the pictures. On motion a vote of thanks was tendered to Professor W. D. Holmes for the negative register and the beautiful photos presented to the society, and that the House Committee be instructed to have the photos framed.

The following names were reported by the Executive Committee and unanimously elected: Ross W. Drum, F. J. Bussman, H. S. Stevenson, F. K. Gray, E. S. Paul. The Committee of Arrangements requested all members to send as many slides as they could to the Sec-

retary by February 1st, as they were arranging for a lantern exhibit on February 6th.

Mr. Orth read a letter from Mr. Levy, on development, etc., and on motion, Mr. Orth was requested to convey to Mr. Levy the thanks of the society, and ask a continuance of his interesting letters.

On motion adjourned.

W. S. BELL.

MEETING FEBRUARY 8, 1886.

Society met at 59 Fourth avenue, Pittsburg.

Meeting called to order at 8 o'clock, with *President* MURRAY in the chair, and nineteen members present. Minutes of the previous meeting read and approved. The Report of the Executive Committee was heard, and the Committee of Arrangements called on for their Report. The Committee reported having given a lantern exhibition on Saturday evening, February 6th, at which time it entertained a great many of its lady friends and visitors, showing 350 slides, of which number 225 were made by the members. The audience expressed itself as much pleased and entertained, and dispersed about 9.30 o'clock. The Committee also reported that it would give another entertainment in a short time, for which they would make arrangements for a room in which they could secure a circle of thirty feet, and test the new oxy-hydrogen lantern.

Mr. MURRAY gave a very graphic description of his trip to the recent exhibition of the Philadelphia Society, and of his visit to their rooms through the kindness of Mr. W. H. Walmsley. He was very much pleased with the appearance and arrangements of the same. On arriving at New York, a few days later, he had the pleasure of meeting Mr. Beach, of the Society of Amateur Photographers of New York, and by him was shown through their elegantly appointed rooms. At Baltimore he met the Secretary of the Baltimore Society, and at his hands received much kindness and attention.

After some pleasant remembrances from members generally, the meeting adjourned at 9 o'clock to watch the demonstration of the making of permanent bromide prints by *President* Murray. The members generally were impressed with the beauty and adaptability of the same to their wants.

F. R. C. PERRIN,

*Corresponding Secretary pro tem.*



## POSTAL PHOTOGRAPHIC CLUB.

SUBJECTS for each album have already been announced to the Club up to the close of the first year, April 1st next. Beginning with the May album and the new year, the programme of subjects, including the December number, will be as follows;

- X. May.—Grotesquerie.
- XI. June.—Statuary; copies of pictures.
- XII. July.—Clouds; water views.
- XIII. August.—Trees; outdoor groups.
- XIV. September.—Christmas cards.
- XV. October.—Instantaneous, other than water.
- XVI. November.—Composition picture.  
Subjects: 1. The musician.  
2. Solid comfort.  
3. Miscellaneous.
- XVII. December.—Portraits (professional) of Club, and landscape with human figures or animals.

The members will understand that each album is not *limited* to the subject designated, but good prints of a miscellaneous character will be frequently used for varying the monotonous liable to arise in a collection embodying only one class.

Album No. 7, which went out in the first week of this month, with 49 prints, makes the entire number now issued 220.

E. L. FRENCH,  
*Secretary.*

AURORA, N. Y., February 13, 1886.

## THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.

A REGULAR meeting of the Society was held Wednesday evening, February 3, 1886, with the *President*, Mr. FREDERIC GRAFF, in the chair.

The resignation of Mr. W. West Randall was tendered and duly accepted, the same to date from December 16, 1885.

Lieutenant Ira MacNutt, U. S. A., was elected to active membership in the society.

The Exhibition Committee reported that Messrs. W. H. Jackson & Co., of Denver, Colo., had presented to the society two pictures with their frames, which had formed part of their exhibit at the late exhibition, the pictures to be selected by the committee; and also that Mr. P. H. Emerson, B. A., M. B., of Southwold, Suffolk, England, and Lieutenant-Colonel J. Waterhouse, B. Sc., of the Survey of India Office, Calcutta, India, had presented their entire exhibits to the society. On mo-

tion of Mr. Burroughs, the hearty thanks of the society were tendered to these gentlemen for their generous and valuable gifts.

The paper for the evening on "Enlarged Reproduction," by Mr. George H. Croughton, was read by Mr. Galloway C. Morris, Mr. Houghton being unavoidably absent.

The paper was listened to with great interest by the members, and during the discussion which followed, Mr. Coates mentioned that one of the pictures of the set exhibited by Dr. Ellerslie Wallace, which was awarded the prize for pictures taken in a foreign country, was an enlargement from a small portion of a negative. The detail and quality were such that only by the closest scrutiny could any difference be detected between it and the other pictures, and none of the judges had noticed that the picture was an enlargement.

Mr. Pancoast asked what difference in the result there would be, if instead of using an enlarged transparency, one made by contact was used, an enlarged negative being made from it.

Mr. Carbutt said the result would be as good if the negative was a perfect one, but there might be defects and markings on it, which would not be perceptible until after enlargement, and an enlarged transparency afforded an opportunity for retouching, which could not otherwise be done so readily.

Mr. Pancoast asked whether the light from the northern sky, or from the direct sun passing through tissue paper, gave the best results?

Mr. Carbutt recommended that the light be taken from a mirror or a white reflector placed outside a window, and reflecting into the camera either sunlight or that from the sky.

Mr. Pancoast showed a new and ingenious exposing shutter, designed and constructed by himself. It was intended for use behind the lens, the opening being on a rotating disk revolving between two circular plates. The power was obtained from a coiled watch spring, and could be regulated to give any required speed by tightening or loosening the coils of the spring.

By an ingenious contrivance the shutter could be used for time exposures, one motion of the pneumatic release uncovering the lens and a second one closing it.

Mr. Browne called attention to the fact that the prints on Eastman's bromide paper were claimed to be "permanent." While he fully recognized the great excellence and value of this paper, and its many admirable qualities,

he doubted very much if it could be justly called absolutely permanent. Sufficient time had not yet elapsed since its introduction to determine its permanence, and it was a well known fact that it is much more difficult to thoroughly eliminate by washing, the hypo, or other chemicals contained in a gelatine film than to do the same with albumen paper. Certain chemical combinations seemed to be formed in albumen prints, which tended to their destruction by fading in the course of time, and he thought similar results would ensue with the gelatine paper.

Mr. Wood thought that paper negatives would rot in time from the oil used on them, just as oil paintings on paper were known to do.

Mr. Samuel Sartain thought that in the case of paintings this was due to the use of linseed oil, which was an oxidizing oil and different in that respect from castor oil.

Mr. Carbutt showed some excellent prints of portraits which had been sent him by a native photographer in India, made from plates prepared by him.

Adjourned.

ROBERT S. REDFIELD,  
*Secretary.*

## PACIFIC COAST AMATEUR PHOTOGRAPHIC ASSOCIATION.

REGULAR meeting of the Pacific Coast Amateur Photographic Association, held at the rooms, No. 318 Pine street, February 4, 1886. *President SMITH* in the chair.

Minutes of last meeting read, corrected and approved.

Messrs. H. S. Herrick and Henry Jones were proposed for membership, and referred to the proper committees.

Mr. Virgil Williams reported that the Art Association would allow the club the use of their rooms any time in April for the purpose of holding the exhibition, and that the large school-room could be used for lectures and lantern slide exhibitions.

The Exhibition Committee promised to send out a circular to the members in a few days.

It was resolved that a special meeting be called for February 18th at the Art Association rooms, for the purpose of testing lantern slides and preparing for the exhibition.

There being no further business, Mr. Tyler produced some undeveloped quarter plates, exposed in Chinatown that day with a detective camera during the Chinese New Year's festivities, and invited the members to try their

hands at developing them. The lights were turned down, and several members went to work. All of the pictures turned out as well as could be expected, though various methods of development were tried.

At a late hour the meeting adjourned.

W. B. TYLER,  
*Corresponding Secretary.*

## THE PHOTOGRAPHIC SECTION OF THE AMERICAN INSTITUTE.

MEETING FEBRUARY 2, 1886.

THE meeting was called to order by the *Vice-President*, J. B. GARDNER.

The *Secretary*, O. G. MASON, announced the reception of the usual photo journals contributed to the section.

The Chairman of the Executive Committee, J. B. Gardner, reported that Drs. Van der Weyde, Ehrmann, and Miller would ask the attention of the members for the present meeting, and at the next meeting, March 2d, a paper on photography had been promised by one of the oldest members of the section. There would also be an exhibition of lantern slides by the Lantern Committee.

Dr. VAN DER WEYDE was then introduced to the audience, and consumed the half hour allotted to him in recounting his earliest experiments in daguerreotyping. He briefly stated the early history of the art; the difficulties encountered by the explorers; how they succeeded in overcoming them; and the men to whom the honor was due for the discovery of the varied chemicals employed in the art. He also stated briefly the chemistry of these substances and the manner in which they were used in making the daguerreotype.

His statements concerning the men who first used certain chemicals to perfect these sun pictures, gave rise to a lively debate in which a number of the members took part, and was finally concluded by an agreement that this subject should be further discussed at some future meeting of the section expressly appointed for this purpose.

Dr. EHLMANN was then introduced, and spoke of several new printing processes that were used mostly by the leading experimentalists of the Old World.

He also exhibited a number of rare pictures of distinguished persons and places, and called the attention of the members to a collection of photographic reproductions from oil paintings made direct on azaline plates by Mr. William Kurtz.

The examination of these pictures led to some remarks on the part of Mr. Kurtz, after which a vote of thanks was tendered to him for his success in this special line of work.

Mr. Faris also exhibited a large picture of a street scene, made on the day of President Lincoln's funeral, which had all the freshness of a print just finished, and was acknowledged to be one of the best examples ever exhibited of durable photographs before the section.

On motion, the meeting then adjourned.

#### MEETING, MARCH 2, 1886.

*President* NEWTON in the chair.

*The Secretary* announced the names and number of journals received for the Section during the month of February, and the usual vote of thanks was passed for the same.

The Chairman of the Executive Committee reported that the programme for the evening was a paper on Photography by the Vice-President of the Section, J. B. Gardner, and a stereopticon exhibition by the Lantern Committee. At the next regular meeting, April 9th, there would also be a lantern exhibition, and a general discussion respecting the claimants of the early discoveries made in photography, together with its early history.

The Lantern Committee reported progress in the construction of their new dissolving view lantern, and expected to have it in use at the next meeting.

Mr. GARDNER's paper was then called for, and read before a large and appreciative audience. He treated his subject in a popular way and thus secured the interest and attention of both the professional and non-professional portions of his audience.

At the close of the reading, his paper was solicited for publication; but he modestly declined, saying it was only part of a lecture he was preparing to give before another association, and must, therefore, decline for the present their very flattering requests. Only a brief summary, therefore, can be given here of its contents. He first spoke of the miraculous nature of the art; how and by whom its mystical aspect was to be dissipated. Second, The class who have signally failed in the business, with apt illustrations, taken, perhaps, from imagination rather than real life, and hence all the more poetical and pleasing to the audience. Also how such want of skill as is manifested by this class had often lowered the dignity of the entire profession.

He then spoke of the discovery of photography, and maintained it was not the result of

any one brain, but the combined effort of many, or, in other words, it was the evolution of more than three centuries. He then referred to the history of photography, and how it might be most profitably studied; and from this passed to the service rendered to photography by the American Institute. He said that this institution had long since established a photographic section by giving to it its ablest men in chemistry, in optics, in astronomy, in mechanics, and in art. It had been the means of diffusing and enlarging the literature of photography, and the head center for obtaining the earliest information of all improvements in the art, whether chemical or mechanical. It had in its possession a library that contained the principal, if not all the most valuable works devoted to this branch of art, also examples of work from the first or leading galleries of Europe and America. And it hoped ere long to add the best facilities for experimental purposes, and thus increase its present usefulness. Like many other arts, in reaching their highest perfection, photography needed the support and guidance of not only talented and wealthy individuals, but rich and influential associations and corporations, and until this came to pass, it would never be discovered how manifold were the uses to which photography could be applied.

After the reading of the paper, the remaining hour of the session was occupied in a stereopticon exhibition of choice pictures by Messrs. Von Sothen, Laudy and Fisk.

A vote of thanks to the entertainers was offered and unanimously passed, and the meeting, on motion, then adjourned.

#### THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.

REGULAR MEETING, JANUARY 12, 1886.

(Continued.)

MR. BEACH [reading]—

"Q.—Does the coldness or warmth of the atmosphere affect the rapidity of printing?"

"A.—Warmth tends greatly to increase the brilliancy of the prints; in extreme cold weather, paper plates and pads taken from a warm room and placed out in the cold, coat over with a film of dampness, thereby retarding the power of the light. Shade printing in summer is better than the direct rays of the hot sun."

"Q.—How long should the prints be washed before toning?"

"A.—Three changes of water are all that is necessary; retaining them in the first water



longest so they may become saturated with water, then the silver will be readily dissolved in the other waters. The prints should be kept changing or moved about."

"Q.—Please state your method of preparing the toning bath and any interesting facts connected therewith, which, in your opinion, has been found useful."

"A.—A ready bath can be prepared by adding 30 grains bicarbonate of soda to 32 ounces of water and a small pinch of salt, adding 2 to 4 grains chloride of gold (previously dissolved). The bath should be mixed twenty-four hours before use, and the prints toned until the high lights are slightly blue. Another good bath is made as follows: 120 grains of acetate of soda, 30 grains bicarbonate of soda, and 30 grains of salt (chloride sodium) to 32 ounces of water; add the same amount of gold as in the last bath; that will not act as quickly as the other. Watch prints carefully, and tone to a strong, brilliant purple; go no further, as prints are liable to become sandy and pale after fixing. The above bath is better for portraits. Prints will be improved by washing them, before toning, in acidified (acetic acid, 1 ounce; water, 10) or salt water (60 grains salt to 10 ounces water). A third kind of washing water gives better warm or brown tones, suitable for exteriors, interiors, landscapes, etc. Such can be better toned in the manner above described by adding perfectly pure washing soda to the water until it feels slightly slippery to the fingers. The print should be toned very little off the red. One hundred degrees Fahrenheit at all seasons is the proper temperature for toning baths."

MR. JOS. BEACH—I have used a solution of borax with bicarbonate of soda, and it has always worked well. Use about a dram of borax and see how that will work.

MR. BEACH—I have also tried borax with ready-sensitized paper, and found it a very good plan if you want to get black tones.

MR. BEACH [reading]—

"Q.—Do you judge by a reflected or transmitted light when a print is usually toned? Do you prefer to do it by diffused daylight or gaslight?"

"A.—Practice will teach one what light is best; always tone nearly to, or a trifle beyond, the color wanted in the finished print: first, for warmth; second, for colder tone. Where strong color is wanted, transmitted light is resorted to to see that the red color is entirely out. Daylight is always preferable. Artificial light generally has no color, and fine definition cannot be observed."

"Q.—What is the usual length of time required?"

"A.—Never less than 7 or 8 minutes, and never longer than from 12 to 15 minutes. When the gold solution is carefully made it will act on the dark or light portions in the time specified. Slow toning gives hard, irony pictures. Quick action flashes the surface, not toning evenly, while the fixing bath will cut away portions of it, making muddy and quick fading prints."

"Q.—How long are the prints washed after toning?"

"A.—I never favor any extra washing of prints in this state, but they should be placed in a large volume or quantity of water, so that each print is thoroughly rinsed to prevent further action."

"Q.—What strength and temperature of the fixing bath do you advise?"

"A.—Hypo 3 ounces, water 32 ounces; use only once in warm weather, not more than twice in winter."

"Q.—What length of time are the prints kept in the same?"

"A.—Fifteen minutes from the time the last prints are put in the solution, and then they need to be kept in motion and separated, and as much care taken in separating them as in toning."

"Q.—How do you judge when they are fixed?"

"A.—The above time will suffice, but a good plan is to hold them up to a strong light and note if they are perfectly clear and transparent in the whites when looked through."

"Q.—Do you advise the use of ammonia in the fixing bath?"

"A.—Positively no. It destroys the texture of the paper. One-half to a quarter ounce bicarbonate soda is best, especially if prints become brown."

"Q.—How long should the prints be washed after fixing?"

"A.—Six to eight changes in clear water, and perfectly drained after each change. Ten to twenty minutes in running water afterwards does no harm."

MR. BEACH—This terminates the written questions.

DR. JANEWAY—I will state that I have been pursuing a course of experiments during the last month to eliminate all the hypo from the prints quickly, and I have had the aid of one or two professional men in these experiments, but I am not ready to report entirely about it. But here is a print that was taken by my direction [passing it around] by a professional,

and I am very much pleased with it. The process, from the time the print went into the fixing bath to the time it was laid out to dry was thirty minutes, and I have tested it with the best tests for hypo I could get hold of, and by these tests I could not find any hypo in the print. The alum bath is a saturated solution. The print goes into two or three alum baths, and remains for a period of two minutes in each bath. I hope to arrive at a final result of the whole process soon, in order to report to the society next month.

The print possesses a glossiness, even although it has not been through any burnisher or anything of the kind. The alum seems to harden the albumen, and produces a glossy appearance.

On motion, the meeting adjourned.

#### SPECIAL MEETING, JANUARY 26, 1886.

The meeting was held in the Society's rooms, 1260 Broadway, and was called to order at 8.20 P. M. *President* BEACH in the chair.

The usual social meetings were announced, and it was stated that on February 9th, a demonstration on enlarging on bromide paper would be made, and improved apparatus for working it shown. It was also announced that the second winter lantern exhibition would occur on February 23d, and would comprise slides sent by members and those belonging to the International Photographic Exchange, also views contributed by the Pittsburgh Amateur Society. Mention was made of a series of photographic books, printed in the Spanish language, presented by Messrs E. & H. T. Anthony & Co. to the society library; also a new system of conducting the library, by which members could take and return books.

The election of Mr. D. C. Sanford and Major Wallace F. Randolph, U. S. A., as active members of the Society, on January 20th, was announced; also the resignation of Mr. Joseph S. Rich as Director, Treasurer and Librarian, which was accepted. In his place Mr. Henry V. Parsell had been elected Treasurer, and Mr. J. H. Maghee, Director and Librarian.

It was further stated that the different committees of the Board of Directors had been recast, Mr. C. W. Dean resigning from the House Committee, Mr. H. V. Parsell from the Finance Committee, and Mr. A. S. Apgar from the Membership Committee.

The following is the present Board of Directors and Standing Committees as changed:

#### BOARD OF DIRECTORS.

F. C. Beach.	R. A. C. Smith.
John H. Janeway.	Gilbert A. Robertson.
C. W. Canfield.	Dexter H. Walker.
J. H. Maghee.	C. Volney King.
C. W. Dean.	Henry V. Parsell.

Allen S. Apgar.

#### STANDING COMMITTEES.

##### *Purchasing Committee.*

F. C. Beach.  
Dexter H. Walker.  
Allen S. Apgar.

##### *Finance Committee.*

John H. Janeway.  
C. Volney King.  
Allen S. Apgar.

##### *Membership Committee.*

Gilbert A. Robertson.  
R. A. C. Smith.  
J. H. Maghee.

##### *House Committee.*

Chas. W. Canfield.  
Dexter H. Walker.  
J. H. Maghee.

##### *Librarian.*

J. H. Maghee.

#### SPECIAL COMMITTEES.

##### *Committee on Dry Plates.*

Henry J. Newton, Chairman.  
Dr. John H. Janeway.  
Dexter H. Walker.  
C. W. Dean.

##### *Committee on Lenses.*

C. W. Dean, Chairman.  
Dr. John H. Janeway.  
James B. Metcalf.

##### *Question Box Committee.*

Dr. John H. Janeway, Chairman.  
Randall Spaulding.  
J. Wells Champney.

The President then stated that he had decided to appoint a special committee of three on "Lantern Slides," to be called the

##### *Lantern Slide Committee.*

Dr. P. H. Mason, Chairman.  
James E. Brush.  
F. C. Beach.

Respecting it, he said: The idea of this committee is to look over all slides that are to be submitted for exhibition, to take care of the slides which are contributed to the so-

ciety, and to have charge of any exchanges of slides which we make with other amateur clubs throughout the country. And while on this subject, I would like to say that I had a call from Mr. George Bullock of the Cincinnati Camera Club, who has just returned from England, and who has made arrangements to have sent over to this country two hundred choice slides, which, when they arrive here, are to be shown by seven different societies, respectively, and after they have been the rounds of all the societies they are to be divided by lot, *pro rata*, and to become the permanent property of each club. It is expected that each society will get up one hundred slides of their own, amounting altogether, among the six or seven societies, to from six hundred or seven hundred lantern slides; these to go around among the different clubs, and after all have been exhibited before each club, two hundred of the best ones will be picked out and shipped abroad to the Camera Club in London, and they also intend to arrange for the distribution of the slides at that end. I wish to state at this point, that on January 6th the By-Laws were amended, by transferring the time of the regular meeting of the Board from the first to the third Wednesday of each month.

Also, that Mr. H. M. Grisdale has been appointed Assistant Librarian. I have assigned the care of the dark room and apparatus therein to Mr. R. Baker.

I was informed by one of our members the other day that he had tried putting a sheet of white paper behind a plate for instantaneous exposures, as recommended in "Mosaics" for 1886, and that it really proved to be beneficial. He had four plates backed with the white paper and two without, and with the same lens, on the same day, secured duplicate exposures. Putting them both in a normal developer, he was surprised to notice how much easier the details in the shadows were brought out in those negatives backed with the white paper than in those without. It would naturally seem as if a white surface would tend to fog the film and produce a sort of halation. Probably something of that kind would happen if the exposure was long; but in the case of an instantaneous exposure the flash of light upon the plate is so brief, very little of it passes through the film, and consequently no bad effect is produced. On the contrary, the weak light which does filter through, seems, when reflected by the white paper, to assist in impressing the image more perfectly on the film.

I have not tried it myself, but can understand that a good effect might be produced.

I intended to exhibit specimens of a new dry plate ferrotype, but a few preliminary trials not being as successful as I desired, I am obliged to defer it to a later meeting.

The subject before us this evening is a new magnesium light, and I have arranged some apparatus here to show you its intended operation. With your indulgence I will read a short paper explaining the invention, and after that I will endeavor to carry out the experiments described.

Mr. BEACH then read a paper on "A New Magnesium Light," and at its conclusion was greeted with applause. [See pages 110, 143.]

Referring to the lamp operated by clock-work,

Mr. ROCKWOOD said: You know, Mr. Beach, that the experiment that I tried with this lamp was a successful one. A party sent for me to photograph a dinner-party, and I told him about this thing, that it was a new invention, and possibly I might not succeed, but if they would be confidential in the matter I would try it. So I sent this lamp, and in addition burned a piece of magnesium ribbon, and made two very successful negatives, with an exposure in one case of 10 or 12 seconds and in the other about 20. There was nothing left to be desired, except that the parties, being under the influence of a little wine, moved around a little.

Mr. BEACH—I have only spoken of this peculiar method of lighting the magnesium to show that it is entirely practicable, even in its present undeveloped condition. The main idea I had in view was to show that it was possible to arrange magnesium lights for the purpose of photographing a large hall. In small rooms it is a very easy matter to take a piece of magnesium and light it, and, with proper arrangements, to get a good picture.

During a recess, which then occurred, the audience was arranged at the rear end of the hall, the ladies occupying the front seats, while the members and friends were sitting and standing in rows behind. Mr. D. C. Hoover operated two 8 x 10 cameras, and Mr. H. J. Newton one 6½ x 8½ camera, at the opposite end of the room. On the side of room opposite the President's desk, was located on a camera stand a retort stand, holding a bowl-shaped brass funnel, under which was burning an alcohol lamp. This apparatus was kindly operated at the request of the President, by Mr. J. A. Stivers. The President and Mr. Baker then affixed



the bits of sponges, saturated with alcohol, to their respective pins in the suspended boxes. When all was prepared to take the picture, the President, Vice-President and Secretary stepped upon the platform; the President then turned on the oxygen gas, and a second after exclaiming the word "Ready," touched the electric key.

Immediately the alcohol in the large box was ignited (but unfortunately that in the smaller box did not take fire, which will be afterwards explained), and in a moment more the magnesium was ablaze, casting a brilliant soft light upon the audience. At the same time Mr. Stivers operated the magnesium powder, which went off in bright flashes at intervals of a second, instead of one steady stream. The whole exposure was estimated as lasting about 15 seconds.

While the magnesium was burning, Mr. Hoover and Mr. Newton made the exposures. The President announced that his latest electrical tests, prior to the meeting, proved that the apparatus was in good working order, and that the first public trial as witnessed by the audience, was only partially successful; that while Mr. Hoover was developing the plates he would examine the apparatus, and if he could remedy the trouble, a second trial would be made.

After some delay it was found there had been an accidental short circuit made in the small box at the time the sponge was placed in position, which accounted for its failure to operate, but when this was remedied, both platinum wires heated in response to the touch of the key. A new magnesium taper was inserted in the larger box, the sponges affixed, and both the glass fronts withdrawn, as it was intended to make the experiment without the use of the oxygen gas.

Mr. H. J. Newton operated at the same time the society's clock-work magnesium light, at the further end of the room, near the camera.

The audience then took their position a second time, and as the President touched the key, both sponges charged with alcohol at once took fire, then the magnesium in the larger box, and presently that in the smaller box. The burning appeared to last for twenty seconds, and at its termination every one applauded. The success of the second experiment proved that the plan, while in its crude state, will work, and with better made apparatus would undoubtedly be successful each time it was tried.

The next matter of interest was the nega-

tives developed by Mr. Hoover, and these were quite satisfactory, showing the time to have been very nearly right. If any criticism was to be made, it was that the lights were a trifle too high and too far away. In this connection a very interesting fact was observed, that the second negative made with the two lights without the use of the oxygen gas did not develop up with as much detail as the first negative, when only one light with oxygen gas was burning. The reason assigned was, that in the last experiment the lights were too high and were not diffused by the cloud of white oxide. Owing to the second trial there was not time enough to make the positive print from the negative while wet, as intended, and the discussion arranged by the "Question Box" Committee was postponed to a subsequent meeting.

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## Bibliography.

LA PLATINOTYPIE. Par MM. Pizzighelli et le Baron Hübl. pp. 90. Gauthier-Villars, Paris.

This little volume upon platinotypes received the Voigtländer gold medal and was first published under the auspices of the Photographic Society of Vienna. The copy that we have before us is an octavo edition, translated into French by M. Henri Gauthier-Villars. The work is divided into two sections—I, Theoretical part; 2, Practical part. In the theoretical part, the history of the various printing processes is ably discussed, beginning with the work of Herschel, Hunt and others. Here are noted the indirect methods of producing platinum pictures by way of salts of silver, uranium and iron, which culminated in the modern method due to the researches of Willis. Full consideration is given to the researches of the many workers that have studied the Willis process, and a careful description of the chemistry of the method is presented.

In the practical part, the choice of paper, preparation of the solutions, sensitizing of the paper, preparation of the platinum salts used in the process, preparation of the ferric oxalate, application of the mixture of platinum and iron salts to the paper, development of the proofs, and a discussion of the failures of the process, are all presented in a thoroughly clear manner. To all who are working the platinotype process we heartily recommend this interesting volume. The book is illustrated with a fine plate, showing the capabilities of the process for artistic productions.

LA PHOTOGRAPHIE INDUSTRIELLE. Par A. Pierre Petit Fils. 16mo., pp. 116. Gauthier-Villars, Paris.

This is one of those excellent little manuals from the Bibliothèque Photographique of MM. Gauthier-Villars, Paris. In half a dozen chapters very clear descriptions are given of the methods and apparatus needed to produce a variety of pictures by photography, to be used in various industrial and scientific pursuits. These include the production of transparent positives, carbon films, vitreous photographs, and photographs on enamel; microscopic positives, projections, enlargements, photo-micrography; photo-chrome, photo-glypty, phototypy, photo-gravure. All these are discussed in a very clear manner, and many illustrations are used to facilitate the descriptions. A chapter is also devoted to photography by the electric light.

LA PHOTOGRAPHIE ARTISTIQUE. Par A. Pierre Petit Fils. 16mo., pp. 46. Gauthier-Villars, Paris.

This is another little volume in the same series as that mentioned above, which treats of photography from the artist's standpoint. The subject is divided into landscapes, architecture, groups and animals. The services of photography to the painter are discussed in a very clear manner and contains many good thoughts. In the matter of choice of site in landscapes, the author is very entertaining in his illustrations. In the chapter on the photography of monuments, he notices the various causes of distortion and the methods of correction. A chapter on interiors and the time of exposure necessary is also quite good. The disposition of groups and also instantaneous photography are each discussed in separate chapters and are interesting. Altogether this is a suggestive and readable little volume.

DEUTSCHE PHOTOGRAPHEN KALENDER für 1886. Herausgegeben von K. Schwier.

As usual, this handy little almanac came duly to hand. The many notes and formula make it particularly welcome, and the careful digest of the progress of photography is very interesting. The various tables for the conversion of weights and measures are well done, as also are those for the various thermometer scales, and the calculations for enlarging and reducing pictures in the camera. An excellent photo-gravure by J. B. Obernetter, from a negative by F. Einlender, and a photo-galvanotype by Dr. Sturenburg, embellish the volume. We tender our best thanks to Herr Schwier for his excellent little annual.

## What Our Friends Would Like to Know.

*N.B.*—We cannot undertake to answer communications of a technical character except through the columns of the BULLETIN. Correspondents will please remember.

*Q.*—J. H. T. writes.—Please let me know through the columns of the BULLETIN, which in your opinion is the best instantaneous shutter for a stereo box.

*A.*—We know of no special make of shutter for this purpose. Our publishers tell us that they have constructed shutters upon the simple drop principle for this purpose that answered all requirements.

*Q.*—M. H. sends a piece of a print which is stained with bronze surface markings, and writes:—What causes my paper to bronze in streaks as shown in sample sent in this letter. My bath is plain silver, sixty grains strong, paper floated one and a half minutes.

*A.*—The cause of these stains is organic dust floating upon the surface of your bath. Before using the bath draw a piece of clean paper over the surface before floating the albumen paper.

*Q.*—R. A. C. writes.—Can you give the process of Ferrier, now Levy & Co. It was a secret for years, but I thought it might have been published now.

*A.*—The process is still secret, but we believe it to be iodized albumen with aceto-nitrate of silver bath; the development being with gallic acid.

*Q.*—G. L. L. writes:—In answer to my inquiry in BULLETIN of February 27th, in regard to the use of lead acetate to eliminate hypo from prints and negatives, you tell how to prepare it, but do not state how to use it. Please inform me if it should be used full strength as given in BULLETIN, and how long prints and negatives should remain in it, and should they be put right in from the hypo without previous washing? I have tried to find something about it in back numbers of BULLETIN and other photo publications, but have not succeeded. I am very anxious to understand about the use of it. If it is a good thing, and will save so much time in washing prints and negatives, I think it would be of interest to others as well as myself to understand the use of it.

*A.*—The solution of lead acetate is used after the plates or prints have come out of the hypo, and have been washed for say twenty

minutes in running water. Use the lead acetate as if it was another bath, in the same way that you would use alum or any other chemical. After being in the lead bath about fifteen minutes, wash again fifteen or twenty minutes in running water and allow to dry.

Q.—C. J. S. writes:—Please answer through the columns of the BULLETIN the following questions:

1st. A drop of water accidentally, and unknown to printer, got on a negative while putting in a fresh piece of paper. When opened to see progress it was discovered, but had made a brown stain. Can this be taken out; and, if so, how, without damage to negative? 2d. Also, how can metallic silver be cleaned off negatives?

A.—The result of wetting the silvered paper was to dissolve some of the free nitrate of silver, which was transferred to the negative, and became reduced. This stain is metallic silver and cannot be removed without destroying the negative. You will see that this latter statement answers your second question. Anything that will take out metallic silver stains will ruin a negative or print.

Q.—C. H. S. writes:—I succeed in getting a very good purple tone upon fumed ready sensitized paper, but when I fix the prints they fade to a very light brown. Would fixing in an ebonite tray cause this? Please answer through the columns of the BULLETIN.

A.—The material of which the tray is constructed has no influence upon the prints if it is *clean* when used. Be sure that your hypo solution is not acid, and if it is, neutralize with ammonia. You can also add a little more than enough to neutralize it without doing any harm.

## Views Caught with the Drop Shutter.

THERE is a rumor that the Knights of Labor have turned their attention to the field of photography, and that the Boston printers have joined this order.

*The Eye*, of Chicago, has recently changed its quarters from 81 State street to 229 on the same thoroughfare.

MR. A. CLEMENTS, of Willis & Clements, of Philadelphia, will soon sail for England to obtain some improvements in platinum printing.

MR. PARSELL, of the Society of Amateur Photographers of New York, is experimenting upon a battery to run an electric light for the magic lantern.

HARRY G. PARCELL, the photographer of Kirksville, Mo., was recently married to Miss Eva Shepard, of the same place. We tender our congratulations.

MR. JOHN ZYBACH, of Niagara Falls, has made a number of views of Welland County, Ontario, to be sent to the Colonial Exhibition in London, England. These views are representative of the interests of the county, and show public buildings, factories, and various business interests. They number 52 in all.

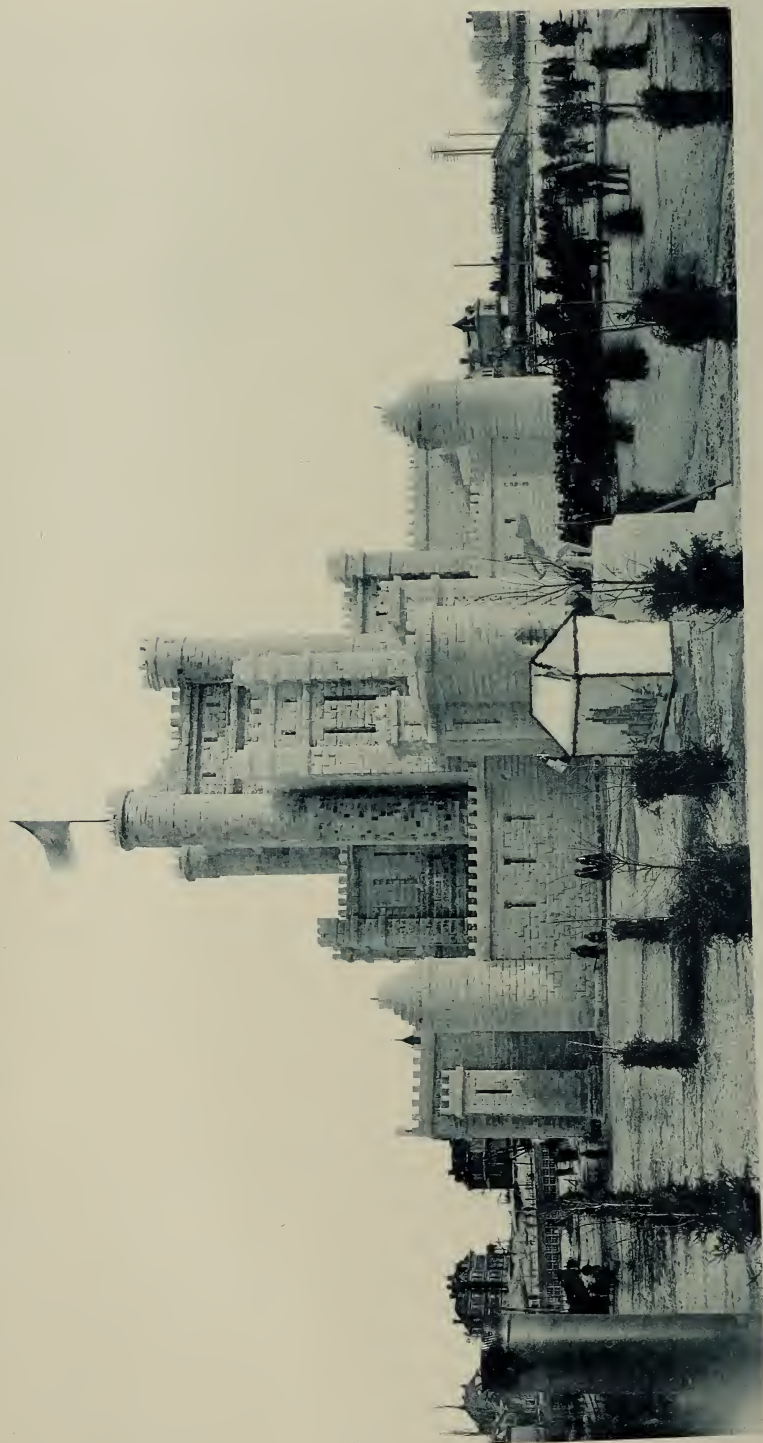
As we go to press, we regret to hear the sad news of the death of JOHN A. SCHOLTEN, the well-known photographer of St. Louis. He died on Sunday last at his home in that city, of Bright's Disease.

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INDUPT PROCESS.  
PHOTOGRAPHED BY C. A. ZIMMERMAN,  
WITH DALLMEYER RAPID RECTILINEAR LENS.

## ICE PALACE

AT ST. PAUL, MINNESOTA.

AM. PHOTO. LITH. CO., N. Y.  
NEGATIVES ON STANLEY DRY PLATE.

# ANTHONY'S Photographic Bulletin.

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Prof. CHARLES F. CHANDLER, Ph.D., LL.D., *Editor*.

ARTHUR H. ELLIOTT, Ph.D., F.C.S., *Associate Editor*.

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MARCH 27, 1886.

Vol. XVII.—No. 6.

ST. LOUIS, JUNE 22-25, 1886.

OUR readers should now be at work upon their contributions for the meeting of the Photographers' Association of America, to be held in St. Louis at above date. We hear of many workers that are busy making preparations for this annual reunion of the best friends of the photographic art. Those who propose to present papers to be read at the meeting should collect material for their subjects now, and make rough drafts of them when they get time. By this means the labor of working up such communications is not so irksome as when the matter is left till the last moment. While, by looking over the drafts from time to time, new thoughts appear which can be incorporated, and thus make the communication all the more valuable. Again, if the papers are completed a little while before the meeting, it would be well to send them to one of the photographic journals to be put into type. By this means a number of proofs could be furnished the authors to be distributed to other journals at the meeting. It should, of course, be understood that these papers cannot be published until after they are read. The BULLETIN will be very much pleased to do this for any of the authors who choose to furnish us with their papers, and will supply the galley proofs to be read at the meeting. Some such system as this will save much time in publication, and leave only the discussions to be revised at the time of the meeting. This matter of papers and reports is a very important one, and the labor attending their proper revision and preparation for the press is very great, and every member of the association who intends to present a communication, should endeavor to make the task as easy as possible for the Revision Committee.

As is already known, we were appointed to solicit communications from the German empire, and have already written a large number of letters to our German friends and correspondents upon the subject. Among the replies, we have received a very encouraging one from Dr. K. Schwier, of the *Deutscher Photographen Verein*, in which he says :

"I make haste to inform you that I shall support the cause in every manner through the columns of our journal. To begin with, I shall request the society members and readers of the *Deutsche Photographen Zeitung*, and all who want to participate, to communicate with me, and then I shall send you the list of applicants.

"It is my belief that numerous German photographers will participate in the exhibition.

"I take this opportunity to also draw your attention to our Convention, taking place August 25th and 26th, in Brunswick, and to request you to invite the mem-

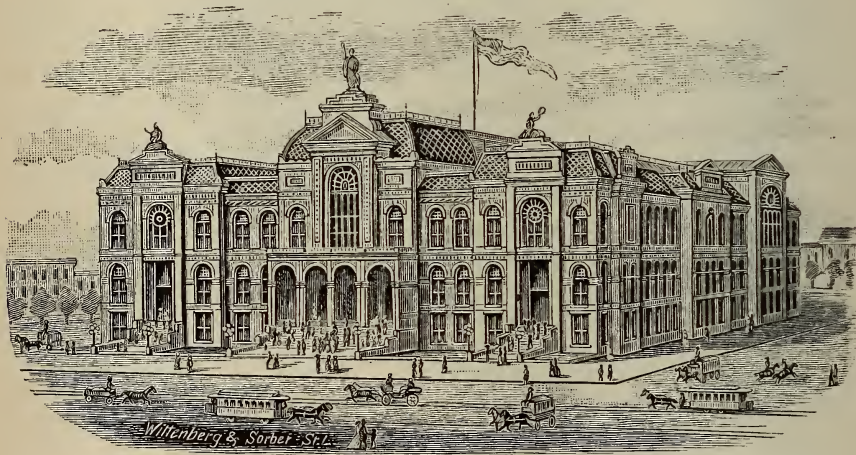


bers of the Photographers' Association to take part in the exhibition connected with the Convention. No. 5 of the *Photographen Zeitung*, sent herewith, will show that foreign exhibitors are admitted to the Festge-Kinderman and Voigtlander Stiftung; and Messrs. Einlender and Müller have made another separate prize specially for the members of the Photographers' Association of America. The two best portraits sent in will receive as a premium some handsome work of art (a watch or goblet). Particulars of this will follow shortly. In case exhibitors should desire a critical opinion of their work from our critic, Professor Biner, it could easily be arranged.

"It would be very agreeable to us to have the pictures sent in added to the portfolio of the Photographen Verein. The frames could be returned or sold at auction for some charitable purpose."

From the above it is evident that our German friends are much interested in the coming Convention in St. Louis, and should stimulate our home members to bestir themselves in the preparation of pictures for the exhibition. There is every evidence that this exhibition will surpass anything ever known before in the annals of American photography.

## ST. LOUIS CONVENTION OF PHOTOGRAPHERS ASS'N OF AMERICA *June 22d to 25th incl. 1886.*



EXPOSITION BUILDING, WHERE THE ASSOCIATION WILL MEET.

*President POTTER*, writing in regard to the above letter of Dr. Schwier, says: "You may inform him that steps will be taken to send over an exhibit of our best work, shown at the St. Louis Convention. A plan will be fixed upon to show this exhibit to all our friends in Europe who unite to send us a similar display for our convention."

This is another stimulus to those competing for prizes at St. Louis. Should the pictures receive prizes here, they will stand a chance to receive other laurels across the Atlantic.

Still another stimulus is offered by our publishers. Not to be behind any one else in promoting the progress of photography, they have offered several prizes to be competed for at St. Louis, the particulars of which will be found on another page.

With so many chances of carrying off a trophy, every photographer in America should send in pictures for competition.

In the matter of papers from abroad, we have every reason to believe that quite a number will be presented at the St. Louis meeting, and we would urge our American members to do their part in this interesting phase of the Convention.

We give herewith an engraving of the handsome Exposition Building in St. Louis, in which the meetings of the association are to take place. For comfort and accommodation it leaves nothing to be desired, and we must congratulate the Executive Committee upon their success in obtaining so good a place for the sessions of the association.

Remember the date of meeting and have your share of the success by sending some contribution to complete what will undoubtedly be a most memorable event in American photographic progress.

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#### EDITORIAL NOTES.

PROF. W. H. PICKERING sends us an interesting letter, in which he comments upon some of our remarks in the article "Artificial Light for Photography." He says: "You arrive at some conclusions with which I cannot quite agree. You speak of the electric arc and magnesium lights as being bluer than the sun. This is a very commonly received opinion. They appear to be bluer, it is true, but this is wholly a subjective effect produced by their faintness as compared with sunlight." He then speaks of a number of experiments he made with a spectro-scope to determine this fact experimentally, and sends us a printed report of this research, for which we tender our best thanks. He then says: "The defects in the pictures to which reference is made cannot be due to the color of the light, but is more likely due to irregular distribution." We are much pleased that such readers of the BULLETIN as Prof. Pickering are sufficiently interested to take the trouble to criticise our remarks, which are often written hurriedly. We shall return to this subject again, as it is becoming daily of more importance in connection with orthochromatic photography.

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OUR comments upon the pictures sent for "Our Picture Gallery" will appear in the next issue of the BULLETIN, being crowded out of this issue.

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*Local Secretary* BENECKE sends us the rules to be observed by exhibitors at the St. Louis Exhibition of the Photographers' Association of America. We give them in full on another page, and particularly call the attention of our readers to their details.

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WE are indebted to MRS. FITZGIBBON-CLARK and MR. G. CRAMER for accounts of the death of Mr. JOHN SCHOLTEN, of St. Louis.

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THE STANLEY DRY PLATE COMPANY have introduced a new brand of plates called "Stanley's Lightning Plate." It is twice as rapid as the Stanley Extra Rapid, and is the most rapid plate in the market. From all we can learn they are remarkably rapid, and this comes from those who have used Stanley's Extra Rapid brand, which is saying a great deal.

VICTOR SCHUMANN has sent us several extremely interesting letters lately upon his spectrum researches in connection with photography. He has also sent us some of his original spectrum negatives. We can only acknowledge them here, but will say more in the future.

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*President* W. H. POTTER, of the Photographers' Association of America, has appointed the *Associate Editor* of the BULLETIN, Dr. ARTHUR H. ELLIOTT, to report upon the progress of photography at the St. Louis Convention. Dr. Elliott will be very much pleased to receive any accounts of novelties in apparatus, methods, or other matters pertaining to our art which would prove interesting to the members of the association.

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THE HIGHLAND CAMERA CLUB was recently organized at Newburgh, N. Y., Colonel G. E. WILLIAMS, *President*, W. H. BURBANK, *Secretary*. All amateur photographers of Orange and Dutchess counties are cordially invited to become members. For further particulars address the Secretary, at Newburgh, N. Y. Regular meetings third Saturday of every month.

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ALVAN CLARK & SONS, the well-known American makers of telescope lenses, have nearly completed what will be the largest lens in the world. It consists of two disks thirty-six inches in diameter, and is for the great telescope of the Lick Observatory to be placed on Mount Hamilton.

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THE late JOHN SCHOLTEN, the well-known St. Louis photographer, offered a prize of fifty dollars for the best exhibit of any amateur photographer in St. Louis at the coming convention.

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WE have received the first number of the *Australian Photographic Journal*, published by Bray & Lichtner, of Sydney. They do us the honor of copying our articles without acknowledgment.

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### WORKING GELATINE DRY PLATES IN THE TROPICS (WEST INDIES).

By MAX BOLTE, of Havana.

HAVING resided for many years in the West Indies (Santo Domingo and Cuba) and being an amateur photographer who modestly ventures to give some information about my experiences, I must first apologize for any erroneous statements which perhaps may be contained in the following, requesting my readers to take the good-will into just consideration.

Havana, the queen of the West Indian capitals, offers a delightful place for amateur photographers, not only because the scenery of the surroundings of this old Spanish town are beautiful, but also that the climate in general (with the exception of a few months) enables the enthusiastic amateur to get splendid pictorial views, *i. e.*, if he is not afraid of some fatigue, and knows where to find them—also there are plenty of facilities to obtain any chemicals, plates or apparatus that he might be in want of in the course of his labors.

For more than four years that I have been handling dry plates at Havana, I have been able to acquire an almost complete knowledge of the characteristics



of each brand, and I can say that I have worked with the European as well as with all the brands which during that period were known in the United States. Regarding European dry plates, my experience embraces Van Monckhoven's, Wratten & Wainwright's, Paget's, Edwards', Swan's, and some German brands. As regards plates of American makers, I can mention Stanley, Carbutt, Inglis, Cramer, Norden, St. Louis, Eastman, which I have tried thoroughly. An intimate friend of mine who resides in India (Bombay) some time ago informed me of his results, and I at the first glance noticed that the amateurs at Havana have not to fight with such difficulties, as regards the hot climate, as our unfortunate brethren on the other side of the globe.

The medium temperature at Havana is seldom lower than  $65^{\circ}$  F. (with the exception of the months of November and February) and higher than  $90^{\circ}$  F. (also with exception of the months of July and September). Much depends also upon the situation of the work room. If confined, or on the flat roof (azoteas) and built lightly, there the mercurial column may raise sometimes even to  $102-105^{\circ}$  and the water being in small tanks, also often rises as high as  $82-85^{\circ}$  F. But speaking of amateur work, I must mention that this class generally has more lofty and ventilated rooms than the professional photographers could manage to get, and besides generally develop their plates at night.

I must admit that during the four years that I worked dry plates of European or American origin, it has only very seldom happened to me that plates frilled; and only at five different times I have been compelled to use ice (*i. e.*, a second larger bath or tray containing the ice was required during development, some pieces of ice being placed in the water tank).

I feel that it would be somewhat invidious mentioning names of makers, but as I hope that the American makers will glance at this modest article, and that my information will make them better understand the needs of the tropical photographers, I may be excused for saying that among the plates I have tried and found to answer well, are particularly the Stanley, and also Carbutt, Eastman, St. Louis and Inglis. Those plates called tropical and instantaneous, work and behave much better than the ordinary plates, and perhaps this is due to a slight addition of alum to the emulsion (?).

As regards hardening baths of simple alum or chrome alum, I must confess that I am not a friend of them, and also that I found in my experience that in high temperatures it seemed to me they are not much good with very or slightly soft plates, for I am of the opinion that they only form a hard skin, which becomes detached from the more soluble layer below, and if great care in manipulating such plates is not resorted to, only produce a fatal result, since every one thinks that after an alum bath the plates are sure and safe. I have thus lost many a good plate. I shall have to speak again of the alum bath when treating of the development, to which I will now proceed.

I have made it a special study to develop plates, and I here beg to state that all the different brands mentioned above have been tried by me, developing them either with iron oxalate, iron lactate and oxalate of potash, or the sundry pyro developers with their great varieties of soda or potash, yellow prussiate of potash, hydroxylamine, etc. I have obtained very fair results with all these different modes; however I adhere now—for more than eighteen months—to a developer of pyro which I accidentally discovered when making a study of how sundry brands of dry plates would behave, and in bringing into opposition the iron de-

velopers and the pyros. I may state here that, with the view of pleasing my friend, Mr. Salome Lopez, owner of the photo supply establishment at Havana, I gave him my formula.

I do not intend to assert that the composition of my formula is something new or never seen before, but I maintain that the proportions which I employ are peculiarly fitted for any brand, and always and under any circumstances produce very fine negatives, being at the same time economical, certain and rapid, and serving equally well for time or instantaneous exposures.

As regards developing, I must say that frilling does not occur as often with iron developer as when pyro is employed. Combinations of sulphate of iron and lactate of iron with neutral oxalate of potash, generally give good results and have the advantage of rendering a hardening bath almost unnecessary.

This is anyhow an advantage, not only because it saves time, but also as there is one manipulation less, and he who ever has worked in a confined laboratory in the tropics, well knows how to appreciate this item.

When pyro combinations are resorted to, it generally occurs that the tone (color) of the negative is not pleasing or of good printing quality, and here it is where a hardening and clearing bath becomes almost a necessity. In my experiments I generally placed the plates developed by this mode, immediately after development and a light washing under the tap, into an alum bath (pure and simple), leaving them there the time necessary to develop another plate, and this always has given me good results, even if the plates did not fix as quick as without the alum bath. I have still to say a word about pyro and potash development. I think it is a well-known fact that many plates when the potash solution is a trifle too strong, show a tendency to frilling. Well, if this happens in a comparatively moderate climate, I presume that nobody will be astonished if I assert that in the tropics under such circumstances it is generally noticed that even the hardest plates (made for that climate) frill easily.

The only remedy of course is nothing else but weaker potash solutions, cool water, and cool developers, alum and fixing baths. Sometimes it also happens that plates developed in this way only frill when in the fixing bath, and this occurrence, conforming to my experiences, is only due to a too strong fixing bath. Consequently, in hot weather, feeble fixing baths ought to be employed.

The nature (calcareous ingredients) of the water at Cuba also merits attention. In order to obtain a fairly bright negative with iron developer I never have been able to get it unless using distilled water. For pyro development there is not such necessity.

The question how to preserve negatives is a rather serious one, if the damp state of the air is considered. I found that it is best to dry the negative well in the sun, dust it carefully, and cover it with a light normal collodion, and after having it exposed again to the sun for a couple of minutes (sufficient to warm it) cover it with a good negative varnish (not too thick).

May I be allowed to add still a word about outdoor work? To the praise of the late Dr. Van Monckhoven, I must say that his recommendation always to protect the camera and plate-holders by a light-tight bag, has proved always a great benefit to me, and often, very often, I have been the only one, who, after an excursion in the open air, could show fine plates. As regards the actinic power of the light in these parts of the globe (the tropics), I shall take pleasure in writing a small article as soon as my time allows it.

## THE DETECTIVE IN DIXIE.

MY DEAR BULLETIN.—At last our Florida friends have thawed out, and most of the frost-bitten foliage of the orange, lemon, lime and other trees has dropped off and fresh shoots are appearing, and it is probable that three or four weeks of the present temperature will restore the groves and gardens to their usual green attire. We however who are here for the first and perhaps the last time, feel greatly disappointed at not being able to witness the evergreen glory of this climate, especially this State, noted for its floral and fruit culture.

Having brought for companionship the little detective, with the necessary equipment which you so kindly provided, I have been on the lookout for novelities by the way, with which to augment my sketch collection, and I hope before the ides of March, to “catch on” as the saying is, to something worthy of a place in the BULLETIN series of illustrations. I must confess however, that romantic and picturesque scenery does not grow in this latitude, and that no amount of fertilization will raise it above the dead level of its original design.

Florida rejoices in a very pretty and suggestive name—the prettiest perhaps of all the sisterhood of States, and until the present winter has been warm and genial to her visitors, but her cold shoulder has now been exposed, and it would not be strange if after this there was distrust and trouble in the family.

I find myself at this writing wandering in the lake region of central Florida, and I have been trying to get an elevation from which to make a focal point of observation, but without success. There are several slight mounds here they call mounts, like Mount Dora, Mount Homeroc, but it is difficult to find one of these rising over fifteen or twenty feet from the lake level, so our outlook is extremely limited.

As to fine residence property it is equally scarce, hotels being the only pretentious buildings noticeable, and these are easily flattered with the camera.

The little detective is, however, at its best in catching street scenes and comicalities. While down town the other day, I, or rather the mysterious instrument I carried, became an object of peering curiosity. It was soon current talk that I was a detective, and a motley group of a hundred about the Post-office awaiting mail delivery, learning that I had “cocked and fired” the revolver several times, began to scatter in various directions.

There is in this locality just now a special interest manifested in an uncaught safe robber, and as one man has been tried and acquitted, another man is wanted, but I may not have got him. I have not seen so large a crowd since. The fact that there was a large number of land agents in focus, creates some uneasiness among their friends and relations.

At one of my outings a day or two since, I met the Shiras Bros., recently here from Western Pennsylvania, who, having improvised the necessary conveniences for view photography in this section, are making some creditable work, and when further equipped and acquainted will be heard from in this speciality.

We acknowledge their courtesy, and the several cabinet specimens sent us of scenes in and about this vicinity.

I shall soon leave here for points on the St. John's River, from which you may hear from me again.

Instantaneously yours, etc.,

G. H. LOOMIS.



# PHOTOGRAPHIC NEWS FROM GERMANY AND AUSTRIA.

*New Mistakes and Recent Progress in Isochromatic Photography—Eder's Researches—Cyanin Plates—Erythrosin Plates—Portraits and Pictures Taken by Gaslight.*

THE progress in photography is mostly due to science, and every intelligent photographer who is in earnest with his art will hold science and its representatives in high esteem. But not every photographer is a scientist, and with him it happens oftentimes that he takes the shining brass for gold. So it happened to the Vienna Photographic Society, whose proceedings contain an article which had better remained out of print. It treats about the most important theme of the day: the production of color-sensitive plates. The author announces that he has discovered a miraculous emulsion, said to be 30° Warnerke, but unfortunately he does not publish the formula. He also praises corallin and aniline-blue, soluble in water, as particularly good sensitizers for the production of isochromatic plates, an assertion contradicted at once by the experiments of Scolik and Dr. Mattmann. But the most remarkable of all is that the man attempted to make spectrum tests without a spectrum, trying to refute the actual spectral experiments of Dr. Eder. True enough, the production of a spectrum is not very convenient; but it is a great mistake to believe that the spectrum could be replaced by a number of silk ribbons representing the rainbow colors. Minium (oxide of lead) it is true, resembles the orange of the spectrum very much, but it is in fact widely different from the same. If a sheet of minium-red paper is looked at through the spectroscope, it will be found that it reflects not only orange-colored rays, but also yellow and red rays. When therefore, in a photographic trial, minium shows some action, it cannot be proven yet to which of its reflecting rays it is due. A photographer handed me some plates a short time ago, which he pointed out as being very red sensitive. A closer examination demonstrated that he had tested them only for fuchsin (aniline-red), which reflects almost as many blue as red rays.

It is peculiar that there exists no pigment which is adequate to the violet of the spectrum; all our violet pigments, even methyl-violet, reflect principally blue and red, and the little prismatic violet which they reflect can hardly be observed by the eye. In opposition to the false so-called scientific researches, Dr. Eder, the eminent photo chemist, offers to us now a number of highly interesting new facts. He has made further experiments with new coloring matters, which serve as optical sensitizers, to make bromide of silver plates sensitive for yellow and red. To these belong several colors heretofore not known, as for instance the naphtal-blue, which makes gelatine plates sensitive for all rays of the spectrum. He bathes gelatine plates in solutions of the naphtal-blue 1 to 3,000 to 1 to 10,000 with addition of  $\frac{1}{2}$  to 2 per cent of ammonia; without ammonia the action is much less. Such plates contain a higher red sensitiveness than those with cyanin, but the handling of them in the dark room is very difficult. Only very dark ruby light can be used, and it must not fall directly upon the plates. The plate has also to be covered during the first stages of development.

Some attention has been caused by the cyanin plates announced by Schumann having been praised, before they were known as actual wonders, but not by Schumann himself. It was announced that these plates were from 30 to 50 times more sensitive than ordinary ones; then it was said they required no

yellow glass to make color-sensitive views, and the clearness of the plate was also praised.

After such exaggerations, Schumann's original article, in which he publishes the results of his experiments, acts like a strong refrigerant, for he requires for his cyanin plates (formulas of which have been published in the *BULLETIN*, No. 3, vol. xvii) fully five minutes to make a view of a color table, while with the azaline plate it can be taken in from 15 to 20 seconds. Dr. Vogel has actually made (during a meeting of the Society for the Advancement of Photography in Berlin) a color table with the plates in 25 seconds.

Schumann's cyanin formulas have in the meantime been tested by other parties, resulting in total failure, particularly fog and weakly sensitive plates. Mr. Scolik, director of the photo-chemical laboratory in Vienna, who also met with failures, says that cyanin is too troublesome a coloring matter, and Schumann himself declares that his plates can be used only in an entirely fresh state, and decompose very quickly.

Scolik in return has obtained very good results by bathing gelatine plates in erythrosin. He writes: "By application of an erythrosin bath for sensitizing there is no danger of failure if the mother-emulsion is good. We bathed, for instance, home-made bromide of silver plates, also plates made by Schleussner, Werth and Angerer, and produced a remarkable clearness and orange-sensitiveness, so that reproductions of oil paintings, aquarelles, and even portraits can be made in kerosene light.

"This coloring matter has besides the advantage that it admits the greatest limit of concentration, that is to say from 5 drops 1 to 1,000 to 200 water, to 100 c.m. 1 to 1,000 to 200 water, without depressing the total sensitiveness in yellow light; on the contrary, by artificial light it showed an increased total sensitiveness.

"We exposed, for instance, in the presence of Messrs. Angerer, Szekely and Schmidt on an aquarelle picture of natural size, with a 2 B Dallmeyer lens, smallest diaphragm 2 c.m. diameter, 8 seconds without yellow glass, and by applying a dark yellow glass, 45 seconds. Lighting: 2 kerosene lamps of 13 candles each; distance from the center of picture 55 c.m.; angle to picture surface, 20°. A very dark oil painting without yellow glass, 5 minutes; with dark yellow glass, 15 minutes with the same light and the same mother-emulsion.

"Both objects had been sufficiently exposed, and were of such a softness and clearness that these results caused us to apply the plates colored with erythrosin for portraits, and the result was excellent, notwithstanding our primitive conditions for lighting (1 Argand burner, matt surface globe, loose flame; 2 kerosene lamps, together 26 candle strength, with white tin reflector) Exposure with a 2 B Dallmeyer lens, 4th stop, 35 seconds; 3d stop, 25 seconds."

We can acknowledge the correctness of these results.

We have bathed Monckhoven plates for one minute in a solution of

Erythrosin, 1 to 1,000.....	10 c. m.
Ammonia.....	2 "
Water.....	200 "

dried and then taken a color table with them in 15 seconds by kerosene light without yellow gas, using a 2 B Dallmeyer lens.

*(To be continued.)*

## THE MAGIC LANTERN AND ITS APPLICATIONS.

BY L. H. LAUDY, PH.D.

(Continued.)

HAVING briefly discussed the more important forms of lanterns, it will be well at this point to devote some further time to its applications, and the first in importance is its use for the projection of pictures, or slides as they are called. Before speaking of them, a few words about the surface upon which they are projected may not be out of place.

*Screens.*—Nothing is better than a good white-finished wall; in the absence of which thick muslin, either painted or kalsomined, that can be attached to a spring roller, is a very convenient method for a hall or lecture-room. If intended for transportation, the paint and kalsomine must be omitted, and muslin used alone; this is fastened to a strong frame, either by tacks or tapes.

Transparent screens are not nearly so well adapted for use as an opaque white surface, as the loss of light by absorption is very great, and the circle must of necessity be small.

When illuminated from behind, and if muslin is used, the screen must be wet to make it translucent and to stretch it. It is better to first attach it to the screen frame and then spray it with water a few hours before use; this makes it more luminous on the side towards the audience.

Fine tracing cloth can be used; or, better still, a large piece of fine ground glass. For class-room experiments, when the apparatus is hidden from view, it is thought by some that the interest in the experiments is lost when the apparatus is unseen, and it is recommended that the method of projection be described as well as the experiments. For, as Tyndall has said: "Experiments have two great uses—a use in discovery and also in tuition—first comes the discoverer and then the teacher, whose function it is to exalt and modify the experiments so as to render them fit for public presentation, as they are a language addressed to the eye as spoken words are to the ear."

*Slides.*—The pictures used in the lantern may be divided into paintings direct upon glass—colored photographic positives, silver positives, Woodburytypes, mechanical slides, which include the comic slipping, lever and panoramic slides, silhouettes, and drawings upon ground glass or gelatine with pen or pencil.

The pictures first used with the lantern were all hand-painted, and many were really works of art. They were on glass measuring in some cases six and eight inches square, and as the paintings were to be greatly magnified, the work was confined to a few artists who were familiar with miniature painting, which made these pictures expensive. Many, however, were executed by less skillful hands, and soon found their way into the market.

When the lime light was first suggested, it was objected to on the grounds that the great heat and light would destroy the paintings. They are still colored by hand, as all attempts at mechanical production have thus far failed. The better class of colored slides are mostly reproductions by means of photography from engravings and paintings, and are beautifully executed by skillful artists with transparent colors, the whole being sealed in balsam and mounted in wooden frames with a round opening.

When the color has been judiciously applied, it adds greatly to the general effect, as the eye is educated to view natural objects in color, and thus they harmonize better with our ideas of nature.



Some of the French colored slides, in which the artist persistently introduces a full moon—and that often in the wrong position—shows to what abuses coloring may be carried. Many times a handsome photographic slide is ruined by the introduction of a gaudy, unnatural cloud and moon effect, and one is compelled to use these miserable daubs, as some of the views of buildings or landscapes cannot be secured without this coloring. Many, however, as the comic slipping and lever slides, are painted direct upon the glass, and it is astonishing to what a degree of perfection this branch has been carried, when we consider the low price at which they are furnished. The slides furnished with the cheap toy lanterns are mostly painted in Nuremberg, Germany, the great center of the toy industries. This place alone produces £800,000 yearly of fancy goods in metal, wood and ornamental colored toys. Some of the cheap French slides are transfers from lithographs upon glass, after which a daub of color is dropped on here and there, without any regard to exact location or effect.

With regard to the coloring of slides, either direct upon the glass or photographic transparencies, it resolves itself into one of patient practice, with a knowledge of the use of palette and brush, and any amount of information conveyed in writing would be useless.

It would also convey us too far away from our present purpose were we to describe the methods, implements and materials used in coloring slides.

The majority of lantern pictures produced for the trade are collodion positives by the wet process. The French still hold to the albumen process, which slides are known by the beautiful warm brown tone, and are called Levy pictures. While the dry gelatino-albumen pictures are slowly being introduced, as yet they have not met with general approval in the trade.

In justice to those who were first instrumental in introducing lantern positives, some little historical account must be given; and the answer to who introduced photographic transparencies for the lantern cannot be better given than by an extract from the London *Art Journal*, which was published in ANTHONY'S BULLETIN some time ago.

*Who Invented the Magic Lantern Pictures?*

*Answer:*

BY ROBERT HUNT.

Our attention has, however, been especially excited by some specimens from Philadelphia, to which the inventors have given the names of hyalotypes.

We are not made acquainted with the details of the process, but it appears evident that it is some modification of those processes on glass which we have already published—gelatine or albumen being made the surface on which the sensitive coating is spread. In the original French photographs on glass, the negatives only were received on that substance, the positive copies being received on paper; this is also the case with the very charming results obtained by Ross and Thompson, of Edinburgh. In the hyalotype, both the positive and negative impressions are obtained on glass, and the result is as near an approach to perfection as we can imagine. The hyalotype is the invention of Messrs. W. & F. Langenheim, of Philadelphia—the proprietors of Mr. Fox Talbot's American patent. These gentlemen state of their process that "The distinguishing feature consists in the material on which the impressions are taken. We have substituted plate-glass for paper in the negative, and also in the positive, altering the

process to suit the new material. The best paper is always a fibrous substance, and the texture of the negative paper is always imprinted on the positive picture, and very few Talbotypes were fit to be shown, except after touching them up by hand. In portraits particularly, this process is apt to destroy the likeness."

The most interesting application of this discovery is the construction of *magic-lantern slides, taken from nature by the camera obscura, without the aid of the pencil or brush.*

Already these photographic artists have published one hundred and twenty-six views around Philadelphia, Washington, and New York, including the Penitentiary of Pennsylvania, Mount Vernon, where the remains of Washington repose, the Smithsonian Institute, the Croton Aqueduct and the Capitol at Washington. Portraits of General Taylor, Henry Clay, Van Buren, Audubon, and others, are published in the same way; these and "Horses at Pasture" from nature, bespeak the high perfection of the process.

"Besides views from nature," says the circular, "and portraits from life, which collection will be increased from time to time, very accurate copies of classical engravings are in process of being taken. Objects from natural history and anatomy, as well as views of interesting machinery, the objects of art and industry, will be added. Persons wishing to have portraits from life transferred on glass for a magic-lantern slide, to enable them to show the different members of the families through that instrument, can have it done, and those living at a distance, by sending a daguerreotype portrait, can have it copied on the transparent material with the utmost accuracy."

When Le Gray, of Paris, first suggested that collodion might be rendered available in photography, and Mr. Archer, of England, carried out his suggestion practically, no idea could have been entertained of the stimulus this discovery would render to the progress of photography, which now figures as one of the large industries of the age. The first stimulus was the introduction of stereoscopic pictures, which at once found ready sale the world over. It was a long time before the makers could be induced to produce positives upon glass, knowing, as they did, that a negative could be produced from the positive, and the value of the original lost. They finally made glass stereoscopic positives, but it was soon found that they could be cut apart and the ground glass, or its substitute, removed, and thus made available for the lantern. Many, if not all, of the first slides used were stereoscopic positives cut in two, until finally a demand for lantern slides took the place of the stereoscopic positives, which are now curiosities and only found in a few collections.

Among the first to enter into the manufacture of lantern positives was Negretti & Zambra, of London, for which they received from Austria, in 1862, the gold medal for the best stereoscopic glass slides and lantern pictures.

After these came Ferrier & Co., in about 1863. Then Levy & Lachenell, of Paris, who have long held a reputation for their beautiful pictures, all being produced on albumen dry plates. The exact formula has never been divulged.

Among the celebrated English makers may be classed Messrs. F. York & Son; Wilson, of Aberdeen; and Valentine, of Dundee; and Mr. W. England and others, of England, all of which produce beautiful and artistic work.

In this country may be named the veteran photographer, Mr. Roche, so long

connected with the house of E. & H. T. Anthony & Co., who has traveled more miles and produced more negatives than any other photographer in this country.

*Woodburytypes.*—Those beautiful gelatine pictures, so well known to lovers of art, are interesting from the fact that they are the first and only practical photo-mechanical pictures that can be used with the lantern; and as great pains were taken to select good subjects to produce a negative, and care bestowed upon the glass positives, together with the low price at which they could be produced, gave them a wonderful degree of popularity and praise, which they justly deserved. Some of the finest illustrations that have ever appeared in art and natural history by any photo-mechanical process are Woodburytypes. They are printed from a lead plate in a hand-press, with thin gelatine, to which the pigment has been added, and are either printed upon paper or glass.

It is to be regretted that few, if any, of these pictures are now made in this country, on account of our climate not being suited to work in gelatine.

It is one thing to make a slide to please the amateur, for he is ready to award it a prize on its purely artistic merits, but let that same picture be offered to the trade, and it is at once subjected to a criticism that differs materially from one of art alone. It must be clear in the shadows; sharp, and well-defined; just of the right intensity to be used either with the oil or lime light; free from imperfections; of a good, pleasing, warm tone, with not too much sky or foreground; properly centered, with a diaphragm suited to the subject; covered with a clear glass of a certain thickness; bound on the edges with black needle-paper, lapping over only the one-eighth of an inch, and so fastened that the edges will not leave the glass. This is what the trade calls for.

When we can combine art and all these requisites together, then we have a perfect slide.

The great difficulty at present with most amateurs is quantity and not quality, for it is seldom that I see what I could call a perfect slide, and many are hardly worth the time of binding. Some possess a possible trace of artistic merit that, if carefully made, might yield better results. Unless possessed of all the above-mentioned points, they can never be classed as perfect pictures for lantern projections. I hope that the criticism that I have ventured may lead to a better class of transparencies than is usually to be seen at an amateur exhibition, for certainly the negatives produced are far in advance of many produced by professionals, and for that reason should yield better slides; although it is not always the best printing negative for paper that is suited for a lantern positive. Unless a negative is clear in the shadows, sharp and free from stain and color, it will be impossible to produce really satisfactory transparencies.

*Mechanical slides* include those to which motion is imparted either by slipping one glass over the other, or by a lever giving a circular movement to the picture, and are called slipping, lever and chromatrope slides. The latter consist of two disks of glass, brilliantly painted, with designs radiating from the center. (Fig. 17.) The disks are made to revolve in opposite directions by a ratchet movement communicated by means of a handle, producing many pleasing changes of design and color. The motion can also be imparted by means of bands instead of a rack. The silhouettes are only figures

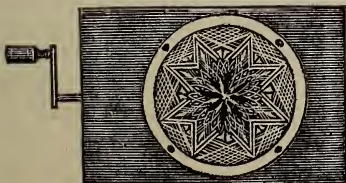


FIG. 17.—CHROMATROPE.



painted in sharp outlines, the other parts being opaque, or a figure can be attached to a glass slide. By means of mechanical slides many curious and interesting effects may be produced. The slipping-slide is used for a variety of scientific and astronomical purposes, but mostly for grotesque and comic effects, the construction of which can be understood from the accompanying cut. (Fig. 18.) In the case of the two combatants, the first piece of glass, when pulled out to its full extent, must hide the lower arms and swords, and when pushed into the frame must hide



FIG. 18.



FIG. 19.

the upper arms, thus by the movement of the piece of glass backwards and forwards the action of fencing is produced. In Fig. 19 the action of the boy beating the donkey and the donkey kicking are given in the same way. A second slip is sometimes used, and in this case would produce the effect of the boy being thrown off the back of the animal. This is the general principle of construction of most of the comic slides which excite the mirth of the young, or perchance arouse in some degree the fears of youthful spectators. (Figs. 20 and 21.)



FIG. 20.



FIG. 21.

In order to prevent the paintings being worn by the action of the movable pieces of glass, strips of thick paper must be pasted between them to prevent contact.

*Lever slides* are used to produce a movement to the head and eyes of man or

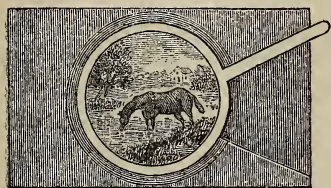


FIG. 22.—LEVER SLIDE.

animals, giving them the appearance of vitality, or the rolling movements of a ship at sea. (Fig. 22.) Revolving effects are produced by having a circular piece of glass in a cogged frame, which is made to revolve by means of a rack and handle. This is used for astronomical slides, showing the revolution of the planets round the

sun, sails of a windmill, or any similar action. With these useful slides, and a little ingenuity and taste, many agreeable and amusing effects may be produced.

*Slide-tinters*, which are used for a variety of effects, such as sunsets, moonlights, and for statuary, are best made by using thin colored films of gelatine

placed between two pieces of glass, or by flowing over the glass white shellac varnish in which is dissolved some soluble aniline color.

*Outline drawings* upon fine ground glass can be used, but the amount of light obstructed will hardly pay for the trouble bestowed upon them. A glass slide coated with a thin film of gelatine is found to answer the purpose much better. The drawing should be made in Indian ink, which in many cases will answer as well as a photographic positive.

It is not my intention in this place to give methods for making lantern positives, as that more properly belongs to photographic manipulation, to which the reader is referred.

Having prepared the reader to make a selection, if he so desires, of the numerous forms of the lantern, a few words in regard to its management will not be out of place; for, like all optical apparatus, it is necessary that some little practice be devoted to it to enable one to make faultless projections. And it is to be hoped that a more satisfactory result will be obtained than is to be witnessed at many public exhibitions, giving proof that the operator lacks knowledge in proper illumination, together with imperfect focusing, and the almost inevitable reversed or upside-down picture, which always provokes laughter and comment, all of which can be avoided by following carefully the simple instructions here given.

Before using the lantern see that the lenses are clean and free from haze, which is best removed by the use of a fine cambric handkerchief free from starch. Many use chamois skin, but, unless very carefully selected and free from grit, it is more likely to scratch than the cambric. Next select a good lime and place it firmly in the socket of the holder, after which turn on the hydrogen carefully, and then light it, at the same time turning the lime to prevent a fracture. After the lime is heated in this way, gradually admit the oxygen, adjusting one or the other gases until the lime is incandescent, not allowing the jet at any time to make a noise; and always remember that the *oxygen must be turned off first* when the light is to be extinguished, after which the hydrogen is turned off. When using gases from cylinders, be sure and set the stop-cocks down tight, for a neglect in this direction often leaves you without gas for the next exhibition.

The next and most important step is the centering or focusing of the light, for the manner in which an object is lighted is second in importance only to the excellence of the glass through which the light passes. These remarks are so true, that it is not too much to say that the power and perfection of the best modern lenses cannot be correctly estimated or fully appreciated unless employed in conjunction with the best methods of illumination. The success of a proper illumination depends upon the incandescent lime being in the center of the condensers, so that the light will thus be able to pass through the axis. This position is to be found by moving the jet, which should be furnished with all the necessary adjustments, either up or down, backward, forward, or to the sides, until the field is free from bluish fringes or dark patches, which indicate that the lime or light is too near the condensers, while an orange color indicates that the lime is too far back.

These adjustments should be made without the use of a picture in the lantern, using the entire circle of light from the condensers. After the light is in its proper position or focused, and the field of light is clear and of a uniform white color all over the circle, then introduce the picture, bringing it in the center of the condensers, and focus by means of the thumb-screw on the objective.

The opening or mat on the picture should just cover the screen. But without the picture the circle will be much larger than the screen, and would reduce the size of the picture if we focused on the circle and not on the picture.

When using the accessory apparatus it is highly important that these directions be carefully carried out, for each attachment will require a certain position of the light to insure success.

The pictures should all be marked with a small gum ticket in the upper corner in such a way that when placed in the lantern they will appear in their proper position on the screen. This little precaution, simple as it is, will often prevent the operator being filled with mortification, and an audience and lecturer with displeasure, at the stupid management at the lantern; for what is more provoking than to see a picture first upside down; while if lettering is upon it, to have that read backwards, and at last after a third effort to come all right. No excuse can be given but total ignorance on the part of the operator for such blunders as this, occurring as they often do in public lectures and by parties claiming to have a knowledge of the lantern.

*(To be continued.)*

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#### OUR ILLUSTRATION.

THE picture we present to our readers with this issue of the BULLETIN is one of unusual interest. As is well known, our friends in St. Paul, Minnesota, determined to make use of the rigors of winter to afford them some pleasure. With this end in view they organized a carnival of winter sports and pastimes, utilizing for this purpose the very elements that generally serve to mar the pleasures of outdoor life. Taking a hint from our Canadian cousins, they built themselves an Ice Palace that, glittering in the sunbeams, reflected from a thousand points the prismatic hues of our faithful servant, Light.

Thinking it would be interesting to our numerous readers if we could get a picture of this interesting but evanescent structure, we sought the assistance of our good friend C. A. Zimmerman, of Zimmerman Brothers, at St. Paul, who, armed with a Dallmeyer R. R. Lens, furnished us with the handsome negatives on Stanley Plates from which the American Photo-lithographic Company have produced our illustrations by the beautiful Indo-tint process.

The great difficulty encountered in making the negatives of such an object as this glittering mass of crystal is the want of contrast between the outlines of the structure and the sky. How well this has been done with the Stanley Plates can be seen by all.

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LEIPZIG, February 27, 1886.

THE style and general appearance of your BULLETIN is excellent, and the numbers you have sent me have been very much admired. There is hardly a paper of that nature which can show such a fine technical execution in printing and illustration, and such a sense for elegance and solidity, as your BULLETIN.

Yours,

VICTOR SCHUMANN.



## A CRITICISM.

To the Editors of the BULLETIN.

IT has been so very many years since I contributed anything to photographic journals, that it is with some hesitation I venture to play the part of critic. The BULLETIN for February 27th came to me to-day, and the picture "From Nature" claimed my careful attention as a beautiful example of the photo-gravure process, and then I read "Good Photographs not always Good Portraits" on page 103. Here is a perfect specimen of an art which to me lacks sympathy. At the left-hand side of the picture, half-way down, close to the trunk of a large tree, but in the distance, is a dark doorway; this doorway leans to the left. It may be that the house is another leaning tower, but more than likely the house as photographed was plumb. Three of the largest trees lean to the left also after the manner of the door-jamb. I took a piece of card-board large enough to hide both pages of the open BULLETIN, and in this I cut a rectangular opening  $3\frac{1}{8}$  inches wide by  $5\frac{5}{16}$  inches high and placed the opening over the picture, making the side of opening parallel with the door-jamb. What a change! The trees stand erect, the door no longer leans over, and the picture is in every way improved.

MORAL.—It takes but a little twist in cutting to spoil the best picture.

COLEMAN SELLERS, Philadelphia.

We showed the above criticism to Mr. Ernest Edwards, of the Photo-gravure Co., and after expressing his indebtedness to Mr. Sellers for his encouraging words, makes the following remarks about the picture under discussion :

The twist in the picture was made deliberately and with malice aforethought. The object was to get a certain bit out of a 10 x 8 negative, which had seemed to me to give a pleasing study of light and shade. The arrangement of lines in composition of the picture was greatly improved by the "twist" Mr. Sellers complains of, and I confess that in this case I allowed architecture to be subordinate to *chiaro-oscuro*. I probably was in error, but "who is convinced against his will is of the same opinion still." I am of the same opinion still, but I hope to see many more criticisms like that of Mr. Coleman Sellers.

Yours truly,

ERNEST EDWARDS.

[If many more of our readers would study the pictures we present with the same spirit as is manifested in the above letters, much good would result, and the habit would lead to an intelligent appreciation of the artistic features of photographic work.—EDS. OF BULLETIN.]

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GERMAN PHOTOGRAPHERS' ASSOCIATION.

EILENDER AND MÜLLER PRIZES.

FOR the exhibition connected with the Fifteenth Convention of the German Photographers' Society, taking place in August, 1886, at Brunswick, we shall award two prizes, consisting of a watch (first prize) and a goblet (second prize), for the best portraits, subject to the following conditions:

1. Every photographer can participate who is a member of the Photographers' Association of America.
2. Only such portraits will be accepted which have been made in the year 1886.

3. The negative must be on a gelatine plate; but is not to be sent in with the print.

4. Portraits and groups of any size (all direct, no enlargements) are admitted, and all must have a dark ground.

5. Less than six pictures shall be furnished, and may be framed or not.

6. A plain print from each plate, without any negative or positive retouching, is to be added to the finished portrait; these prints are to be pasted upon ordinary white card-board and will also be exhibited with the others.

7. The following remarks are to be made under each print:

*a.* Time of day and date.

*b.* Lens, and diameter of diaphragm.

*c.* Time of exposure.

The name and residence of the exhibitor should also be given in each case.

8. Competitors for these prizes have to send in their pictures not later than August 20th, directed to Mr. L. Spanger-Herford, Brunswick, marked "For the Eilender & Müller prize."

9. The two prizes will be given to the two best collections, which will be governed by artistic lighting and arrangement, and also judicious treatment of retouching.

10. Decision in regard to prizes will be made during the Convention in Brunswick by a Commission of three persons, one to be chosen by Messrs. Eilender and Müller, one by the Chairman of the German Photographers' Association, and one to be selected by the Convention. The Chairman of the German Photographers' Association may join this Commission, but only as a consulting member.

11. Both collections receiving the prizes (the frames excepted) will be the property of the German Photographers' Association.

12. Each competitor has to furnish proof that he has observed the foregoing conditions.

February, 1886.

F. EILENDER, Cologne,  
FR. MÜLLER, Munich.

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#### \$150 IN PRIZES.

IN view of the great interest now being manifested in the coming Convention of the Photographers' Association of America, our publishers intend to add their influence to make the meeting interesting, by offering a number of prizes for competition.

The above sum will be given as prizes for the best display at the coming Convention of the P. A. of A., to be held at St. Louis in June next, for the following pictures, which are to be made with Dallmeyer's Lenses on Stanley Dry Plates, printed on N. P. A. Albumen Paper.

\$50 for the best 18 x 22 portrait.

\$50 " " " six 8 x 10 views.

\$50 " " " twelve cabinet photos.

The successful pictures, and negatives from which they were printed, to become the property of E. & H. T. Anthony & Co.

Merit to be determined by three judges, who will be appointed at time of meeting.

Pictures to be marked: "Competition for the Anthony Prize."

### ARTISTS' CUFFS FOR PHOTOGRAPHERS.

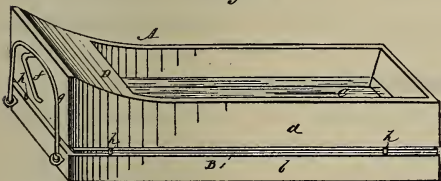
SOME weeks ago we noticed the appearance of these very useful protectors for the wrist-bands of one's shirts. We have been using them frequently since that time, and have become more and more satisfied that they are a great desideratum for the developing room. We give herewith a cut of this new comfort for use in developing, and can heartily recommend our readers to try them.



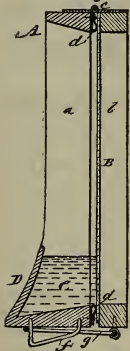
### A NEW DEVELOPING TRAY.

A NOVELTY, in the shape of a new developing tray, is illustrated in the cuts we give below. The idea of the whole combination is to use the negative itself to form the bottom of the tray, the plate being clamped between two frames, which serve as the upper and lower parts. Figure 1 shows a perspective view with the

*Fig. 1.*



*Fig. 2.*



*Fig. 3.*

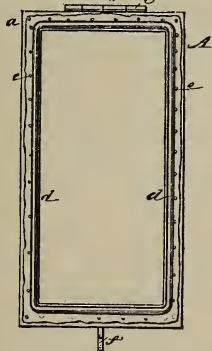


plate *B* between the upper and lower sections *a* and *b* of the tray. A liquid-tight joint is secured upon the plate by means of sheet rubber, and a reservoir in the upper part at *D* serves to retain the developing fluid when the tray is placed in a vertical position. Figure 2 shows a section through the tray when held vertically, with the fluid in the reservoir. Figure 3 shows the upper section of the tray, with the sheet rubber packing that serves to make a liquid-tight joint. This tray can also be used for paper negatives by placing them upon a clear glass plate, and then clamping both paper and plate between the two sections of the tray. By this latter method the troublesome curling of the paper is

entirely overcome, and development is much facilitated by the fixed position of the paper.

I LIKE the BULLETIN very much, and always look forward to the day I get it.

E. CANNON.

I MUST have the BULLETIN to keep posted on everything photographic. No enterprising photographer can afford to be without it, and furthermore you deserve the thanks of the fraternity for so fine a publication, and if you continue to give so much for the money, you can count on me as a life-long subscriber.

LINCOLN S. BATTERSON.



## OBITUARY.

JOHN A. SCHOLTEN.

THIS well-known photographer passed away at his residence in St. Louis on March 7, 1886, from an acute attack of pneumonia. Mr. Scholten was born at Rees, in Rhenish Prussia, on October 18, 1829, and attended school there until he was fourteen years old. About this time his parents came to this country and settled at Herrmann, in Missouri. Three years later young Scholten went to St. Louis, and for a time was in the dry goods business. In 1857 he entered the photographic profession, and success followed success until he was one of the best known photographers in two continents. In 1858 he married Miss Mary Ann Cooney, and they had eight children, of whom three sons and two daughters are now living.

Mr. Scholten was a member of the National Photographers' Association, the Germania Club of St. Louis, together with a number of athletic and benevolent societies. He was held in high esteem by his fellow-citizens and a large circle of the photographic fraternity. His prominence in the profession will make his loss keenly felt, and cast a gloom over the group of fellow-workers with whom he has labored for the good of the photographic art for so many years.

*[From the Scientific American.]*

## A SUBSTITUTE FOR GLASS IN PHOTOGRAPHY.

*(Continued.)*

THE developer recommended for instantaneous exposures is that known as Cooper's soda and pyro developer. Full directions regarding its composition and use will be found on pages 23 and 24, vol. xvi, of BULLETIN.

Fig. 9\* shows the tray upon the table, in which is the developer; the bottle and graduates may also be seen. The developed negative is held up by its upper corners with the fingers for examination of its density before the red light, which is supposed to be on a shelf in front of the operator. The company furnish the developer already mixed, thereby insuring the novice perfect success at the outset.

Although silver prints can readily be struck off in the ordinary way in the printing frame from the paper negative after it is dry, which will show no grain in the half tones, still it is advised, when a large number of prints are to be made, that the negative be made transparent by means of either castor oil or paraffine. Castor oil has been adopted, and the method of applying it is illustrated in Fig. 10. To the right of the operator may be seen either a gas or kerosene stove, on which a common flat iron is heated until it is hot enough to almost scorch the paper. The negative is laid face down upon a pad composed of six thicknesses of folded Manila paper. With a thick bunch of flannel or cotton-wool the back is swabbed over with castor oil; if the size should be 5 x 8, a teaspoonful would be sufficient. Then the hot flat iron is pushed over the back as if one were in the act of ironing, as shown in Fig. 10. The path of the iron being followed rapidly with the swab of cotton, which, being saturated with oil, fills rapidly the pores of the paper as soon as they are freed from the air in them by the heat. In this way the paper is very rapidly made transparent, and the negative as useful as if it were on glass.

\* For cuts see Bulletin, page 118.

If paraffine is used, the negative should be laid down on a hot iron, and a piece of paraffine wax rubbed over its back; the surplus not absorbed by the paper may then be taken up with blotting-paper.

The danger of breakage is avoided, thereby making rough transportation perfectly safe.

The compact way in which the negatives can be packed should not be overlooked; they can be kept in books, thereby affording as easy a means of reference as if they were in a photographic album—a point of much value in any large concern. They can be used in photographic ink printing processes without the need of transfer, so common with glass plates. They are splendidly adapted for large work, and, as an instance of their success in this respect, we have but to refer to the very fine exhibition of life-sized direct portraits which was given at the Buffalo Photographers' Convention, in Buffalo, N. Y., last July, by the Eastman Company.

The softness and delicacy of the shadows and the brilliancy of the high lights was specially noticeable. Mr. Geo. G. Rockwood, the well-known photographer of this city, was one of the first to use this process for large work, and we were recently shown by him a life-size portrait of Robert Bonner, and an interior of a Roman Catholic cathedral, 3 feet by 2 feet, both of which were some of the best specimens of large direct photographs that we remember seeing. In either case not a spot or blemish of any kind was to be found. The prints from the negatives were in no wise to be distinguished from those made on glass. Although the exposure in the cathedral was nearly an hour and a half, scarcely any halation was visible around a window which was directly in front of the camera. Its perfect freedom from halation is one of the characteristics of the paper, making it particularly useful in the photographing of interiors, or in taking pictures against the light.

The retouching of paper negatives is more easily done than on glass, for the back of the negative is worked upon by a pencil, any mistake can be readily erased. With crayon stubs very pretty cloud effects can be worked into the sky of landscape negatives.

The enterprise of the Eastman Company in introducing so noteworthy an invention as their roll holder, and the excellent sensitive paper film used with it, is illustrative of the characteristic push and energy so often displayed by American inventors. We bespeak for their improvement an important future, and consider it an advance in the art of photography which will be welcomed both by the amateur and professional.

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Now that I am permanently located and a new year is commencing, I thought that perhaps I could not do better than to subscribe for your BULLETIN for a year, as it is a journal I have always appreciated in the occasional numbers I have met, as having *more substance* and *less gas* than many of our American publications.

W. SYLVESTER TAYLOR.

[The reason for the above will be readily understood when our correspondent learns that our Associate Editor is Chemist to the Consolidated Gas Companies, and any spare gas would naturally find its best market with those Companies.—PUBLISHERS OF BULLETIN.]

ANTHONY'S  
Photographic Bulletin.

EDITED BY

**Prof. C. F. CHANDLER, Ph.D., LL.D.,**  
Aided by **ARTHUR H. ELLIOTT, Ph.D., F.C.S.,**  
and a corps of practical assistants.

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Advertisements should reach us not later than the Monday preceding the issue for which they are intended, otherwise we cannot promise to publish them in the succeeding number. It is also necessary to notify us of any alteration before the date above mentioned, and to state for what period the advertisement should be continued—whether for one, six, twelve or twenty-four issues.

*E. & H. T. ANTHONY & CO., Publishers.*

**RULES TO BE OBSERVED BY EXHIBITORS  
AT THE ST. LOUIS CONVENTION OF  
THE PHOTOGRAPHERS' ASSOCIATION  
OF AMERICA.**

JUNE 22-25, INCLUSIVE, 1886.

ALL photographers who desire to exhibit or compete for the prizes offered by the association, will please notify the undersigned and state the amount of space required, which should not exceed three hundred square feet of wall space. When applying for space it should be stated whether pictures will be exhibited framed or unframed.

All exhibits must be shipped freight prepaid and directed to

ROBERT BENECKE.

Local Secretary of P. A. of A., Exposition  
Building, St. Louis, Mo.

The boxes containing the pictures should have the name of the exhibitor marked on the outside, also on the inside of cover to facilitate the reshipping.

All exhibitors, except those from foreign countries, must attend to the hanging of their pictures; and all exhibits must positively be in

place by ten o' clock A. M., Tuesday, June 22,  
1886.

The resolution adopted by the Executive Committee, that all pictures from foreign countries should become the property of this association, has been rescinded. The association will bear the cost of transportation and return the exhibits to their owners.

Competitors for the prizes offered by the association are requested to answer the following questions, and sign a certificate as below, which will be sent to any address on application:

- Q. 1. What lenses were used?
- Q. 2. What make of plates?
- Q. 3. What developer?
- Q. 4. What paper?

Q. 5. Add any special information as to developing, intensifying, reducing, etc., that you may consider of value.

CERTIFICATE.

....., the undersigned, certify on honor that each and every photograph entered by ..... , to compete for prizes offered by the Photographers' Association of America, at the Convention to be held in St. Louis, Mo., in 1886, is printed from a negative or negatives made since the Convention of said Association held at Buffalo, N. Y., July 14-18, 1885.

PACIFIC COAST AMATEUR PHOTOGRAPHIC  
ASSOCIATION.

THIRD annual meeting of the Pacific Coast Amateur Photographic Association, held at the rooms, 318 Pine street, Thursday evening, March 4, 1886. *President* SMITH in the chair.

Minutes of last regular meeting read and approved.

The committee having reported favorably, Messrs. H. S. Herrick and Harry Jones were duly elected members of the association.

The Treasurer then made his annual report.

He announced that the total Active Members were 34; Honorary, 2; on absent list, 2—total, 38.

That all debts were paid, including a balance due from last year, and that there was \$77.50 cash in the treasury, and \$75 due the association for dues. About half of the amount owing for dues was then collected from delinquent members present, and the report and vouchers referred to the Finance Committee.

The Exhibition Committee reported that they had about perfected their arrangements, but invited discussion on several points.

It was finally decided to issue three hundred



invitations for the opening night, each invitation to admit a gentleman and ladies.

The invitations to be in photographic form, and inclosed in an envelope, using a miniature photograph in lieu of a postage stamp, and the association monogram, reduced, for a seal.

It was resolved that the exhibition remain open, daily, from April 5th to April 10th, inclusive.

Whether one or two evenings' entertainments should be given, was left in the hands of the Committee, with full power to act.

It was resolved to charge no admission fee, but to admit the general public at all times during the week on presentation of card, to be procured from any member.

Mr. Tyler and Mr. Yale were requested to prepare photographic papers for the opening night, which they agreed to do.

The matter of music was referred back to the Committee, with power to act.

A list of prints already sent in and promised was read, and the committee reported that twenty-one exhibitors would exhibit between 650 and 700 prints.

The Secretary was instructed to send blanks to each member, asking them to insert the number of prints and lantern slides they would furnish.

A great variety of apparatus, cameras, shutters, etc., were promised by different members.

It was resolved that a series of "First Attempts" should be exhibited.

The President then announced that the regular business being concluded, the election of officers for the ensuing year was in order.

Mr. W. H. Lowden was nominated for President; George Tasheira, for Vice-President; W. M. Speyer, for Secretary and Treasurer; and W. B. Tyler, for Corresponding Secretary.

There being no other nominations, the President declared the nominations closed, and thereupon, on motion, the Secretary cast the vote, and the above named gentlemen were declared duly elected.

Mr. Smith, the outgoing President, then thanked the association for the uniform courtesy he had received, and introduced Mr. W. H. Lowden, the new President.

Mr. Lowden, taking the chair, thanked the members for the honor they had done him, and assured them that he would always work for the best interests of the association.

The President then announced the following committees:

Executive—Messrs. Smith, Gibbs and Oliver.

Membership—Messrs. Lowden, Brooks and Stanford.

Finance—Messrs. Blackburn, McConnell and Shafer.

The meeting then adjourned.

W. B. TYLER,  
*Corresponding Secretary.*

SAN FRANCISCO, March 6, 1886.

## THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.

A STATED meeting of the society was held Wednesday-evening, March 3, 1886, with the President, Mr. FREDERIC GRAFF, in the chair.

The Executive Committee reported that the publishers of the following journals had kindly supplied certain missing numbers to the society free of cost, viz.: ANTHONY'S PHOTOGRAPHIC BULLETIN, the *Photographic Times*, the *St. Louis Photographer*, the *Amateur Photographer* (of London), and the *Scientific American*. On motion, a vote of thanks for the donations was passed.

The Committee on Membership reported the election of Mr. Wm. H. Doering as an active member.

The Exhibition Committee presented their report, giving a full account of their labors in connection with the exhibition. A guarantee fund for the protection of the treasury was first raised, being subscribed to by seventeen members.

The society being composed of both amateur and professional photographers, the work of both classes was admitted.

As the public have frequent opportunities at other exhibitions of various kinds to see what can be done in the way of artistic work by professional portrait photographers, and as the room available was limited, it was thought best to exclude works of this class, it being especially desired to show what could be done in other branches of the art.

The rules and classification agreed upon were based largely upon those previously adopted by the Boston Society of Amateur Photographers.

All pictures received were required to be entered in competition, and only such pictures were admitted as were in accordance with the rules and classifications adopted. This excluded pictures "for exhibition only," which otherwise might have crowded the other work and served mainly to advertise certain private interests.

Separate classes were provided for landscapes and marine work by professionals, and

some classes were subdivided according to size of plate used.

The total number of pictures entered was 1,752, of which 99 were lantern slides and about 29 transparencies, leaving 1,624 pictures which occupied about 1,600 square feet of wall space.

The total number of exhibitors was 114; 45 of whom were members of the society, 16 foreign, and 12 ladies.

Fifteen societies were represented, including seven English associations.

The best filled classes were those for landscapes by amateurs, which contained 526 entries. 202 "Figure Compositions" were entered; and 91 pictures by ladies.

Forty-five kinds or makes of plates were used, and twenty-three makes of lenses were represented.

The expense account showed a fair balance of profit to the credit of the society.

As a final suggestion, the Committee called attention to a plan which had been talked of by some of the members, that an arrangement be proposed to the New York and Boston societies, that hereafter, instead of general exhibitions being held in all three of the cities each year, but *one*, in which all should take part, be held annually, the three societies having it in charge by turns, each one every third year.

This, while not interfering with annual exhibitions by each society, confined to work of its own members, would enable all three to unite each year in one grand exhibition, which would be more successful because of the united effort, and more interesting to the public in each city from not recurring too frequently. The prizes won at these exhibitions would be more valuable, as all the best work of the country would be likely to meet in competition.

The report being accepted, a resolution was offered by Mr. John G. Bullock, and carried, as follows:

*"Resolved,* That the Photographic Society of Philadelphia hereby agrees to hold a general exhibition of photographs once in three years only, provided that the Society of Amateur Photographers of New York and the Boston Society of Amateur Photographers will make a similar agreement, with the object in view to unite our interests and improve our exhibitions thereby."

The Secretary was directed to communicate with the New York and Boston societies on the subject.

The paper for the evening on the "Oxy-

Hydrogen Lantern" was read by Mr. Frank Bement. [See next BULLETIN.]

Mr. Frederick E. Ives showed a new form of optical lantern devised by him. It was remarkable principally for its compactness, being constructed to fold up and form its own carrying case, which is less than a quarter the size of the carrying case of the smallest oxy-hydrogen lantern now in the market. When set up for use it is a complete working lantern, having jet and lenses of the usual size and power, with all necessary adjustments.

One small trunk of 2¼ cubic feet capacity will carry a pair of these lanterns, together with an extra pair of long-focus objectives, a dissolving key and connections, a pressure gauge, 150 lantern slides in regular grooved boxes, a large-size ether saturator, the small box table on which the lanterns are operated, an assortment of tools, extra jets, limes, etc.

The small box table on which the lanterns are operated, and to which the dissolving key and ether saturator are attached, is made to fit the top of an oxygen cylinder, which, with a screen, complete the outfit for producing first-class dissolving views on the largest scale.

Mr. Nash, of Harrisburg, showed a most ingenious shutter, whose weight did not exceed one ounce. Though the principle could be adapted to any lens, the one shown was intended for use with an ordinary single view lens, and in fact was constructed from a part of the lens itself. It worked directly back of the diaphragm opening, setting itself automatically after each exposure. A fan-shaped piece of thin metal, with an opening, was caused, by pressure and a spring, to pass the opening of the lens. As soon as the opening was entirely uncovered, a second piece, actuated by the same pressure, covered the opening, and on relieving the pressure of the finger on the spring both flew back to their original position, and were ready for the next exposure. The shutter could be adjusted for time exposures, and could also be arranged so that the cap could be used when desirable.

Mr. Pancoast showed an album of views taken in India, which had been sent him recently by a friend.

Mr. Bartlett wished to know whether the increase in the detail in the dark portions of an under-timed plate is obtained through the action of the very diluted actinic light filtered through the ruby glass, as in the case of "preliminary exposure," or to the prolonged action of the developer itself. His uncertainty as to the cause followed some observations he had made of the accelerating action of light in

calling forth the detail in the non-actinic colors, red and yellow.

He had exposed upon red, yellow and blue objects, giving only sufficient time to bring out the blue, and consequently found a falling off in the other colors. To accelerate their tardiness, he held the partially developed plate for a few seconds to the ruby flame, and found that detail began to appear which had refused to show itself in the developer. He next tried the effect of exposing very quickly to direct daylight under red and yellow glasses, with the same results, but he could not strike the exact homœopathic dose to effect his object without fogging.

He had somewhat better results on exposing an under-timed plate, before putting it in the developer, under the red and yellow glass, and also to direct daylight, by means of a rapid shutter and a very small opening in the blind.

Increase of detail always followed, but in every case there was more or less fog.

The only plates he had at the time were extremely sensitive. Perhaps a more scientific way of experimenting would be to subject the plate to the special rays of the spectrum, whose dilution of actinism can be better estimated than in the light admitted through colored glass.

In this connection Mr. Pancoast recalled an experience he once had, in forcing out detail in a washed emulsion plate by holding it over a candle. He suggested that diluted actinism may have been the cause of increase of detail in this case.

Mr. Browne thought that the heat of the candle had more to do with it.

Mr. J. G. Bullock, referring to the discussion at the last meeting in regard to the permanence of prints on gelatine paper, read a letter from a maker of the paper, to whom he had written to inquire on what the claims of permanence were based.

The letter stated that a well-washed print on gelatine paper is practically the same as a well-washed negative, and equally permanent. Negatives are printed in the sun through long periods of time, and if thoroughly washed do not fade. They are different in this respect from an albumen print, which is liable to fade even when thoroughly washed. The elimination of hypo from gelatine is an easy matter compared with albumen which has been rendered insoluble. We find no difficulty in washing emulsion in slabs a quarter of an inch thick; as compared with this, the washing of very thin films on paper is a short operation.

As far as actual proof is concerned, gelatine paper has been in use only four or five years, and up to this time we have never heard any complaints. So far, both theory and experience uphold the claim that the prints are permanent.

Mr. Brown thought that enough time had not yet elapsed since gelatine was introduced for negatives or prints, to decide whether it was permanent. His experience dated back to about 1853; and, though he thought wet plates were as lasting as any, he doubted their *absolute* permanence.

It was suggested that intensification was, in many cases, the cause of fading in both collodion and gelatine negatives.

In reply to a question as to the safest intensifier, cyanide of silver was recommended, and an experiment described in one of the recent journals was quoted in proof. An intensified negative was partly covered with several thicknesses of yellow paper and then exposed to the direct rays of the sun for the space of five months. On removal of the paper not the slightest difference could be seen between the two portions of the negative.

Mr. S. M. Fox thought one cause of fading after intensification was the repeated use of the same mercury solution, which gradually became contaminated with hypo from the plates upon which it had been used.

After a recess for a lantern exhibition, the meeting adjourned.

ROBERT S. REDFIELD,  
*Secretary.*

## THE MINNEAPOLIS PHOTOGRAPHIC CLUB.

THE regular monthly meeting of the club was held at the club room, on Monday, March 8th, with a very good attendance.

After the regular routine business, the following gentlemen were elected honorary members:

J. S. Hamblin, Minneapolis; T. W. Ingersoll, St. Paul; F. C. Beach and W. I. Adams, New York; and S. W. Burnham, Chicago.

Pictures were then exhibited for the competition for the prize medal, and as there seemed to be a general misunderstanding as to the rules and requirements, a more definite set were adopted. The medal, which is quite a pretty one, of gold, with the monogram of the club and a camera, was finally awarded to Prof. E. R. Shepard, for a 4 x 5 picture of the "Milling District," which was very prettily lighted.

It was decided that, in future, the entire



work on the picture, from preparing the silver bath to burnishing the print, be performed by the competitor, thus forcing them out of the too common rut among amateurs of having some part of the work done.

There is every promise of lively competition in future, and the prize works as a very good incentive.

R. D. CLEVELAND,

*Secretary.*

## ROCHESTER PHOTOGRAPHIC ASSOCIATION.

REGULAR MEETING, MARCH 8, 1886.

*President* HOVEY in the chair, sixteen members and two visitors present. The greater part of the evening was spent in discussing society business. Treasurer reported receiving bill from E. L. Wilson, publisher *Philadelphia Photographer*, for \$5, one year's subscription. As members of the society had no knowledge of any official subscription for the above mentioned journal, on motion of Mr. Dumont, the secretary was instructed to write Mr. Wilson for explanation. M. B. Punnett was unanimously elected secretary in place of Mr. Mawdsley, who resigned on account of press of business. Of the prints, representing the subject "statuary," entered for competition, Mr. Williams' gelatino-bromide print was chosen as the best representation. The society extends a cordial invitation to all fellow artists, and should any of your readers chance to stray to Rochester, would be pleased to have them attend.

Please address all communications, papers, etc., to

MILTON B. BUNNETT,

*Secretary,*

30 Magnee street.

## PHILADELPHIA AMATEUR PHOTOGRAPHIC CLUB.

THE regular monthly meeting of the Club was held at their rooms, on February 15th, with Mr. W. A. HAINES in the chair.

The minutes of the previous meeting were read and approved.

Mr. Clement introduced Mr. C. Gentilé, who was present as a visitor.

The *Secretary* was ordered to send a vote of thanks to Mr. George H. Ripley for his kind gift of a developing lantern to the club's dark room.

The Executive Committee reported that the club's lantern exhibition, at Girard College, had passed off successfully and had been much enjoyed by all present.

Mr. HAINES read a paper on "Exposures,"

which had been received by the club for this meeting. [See next BULLETIN.]

The following was found in the question box:

"In making dry plate slides, why is it a clear sky cannot be obtained?"

Mr. CLEMENTS suggested that the lack of clearness in the skies was probably due to over-exposure.

Mr. CARBUTT said that a clear sky cannot be obtained in a slide unless the negative is dense enough to give a pure sky in a silver print. If the negative gives a good sky in a print, but does not do so in a slide, then the latter is over-exposed.

Mr. THOMPSON said he had been using a solution of red prussiate of potash to clear his slides with excellent results.

Upon motion, Mr. Gentilé was elected an honorary member of the club.

After a recess for the exhibition of some lantern slides, the meeting adjourned.

## THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.

REGULAR MEETING, FEBRUARY 9, 1886.

THE meeting was called to order at 8.30 o'clock. Mr. F. C. BEACH in the chair.

After the usual announcements of future meetings, Mr. Beach said that on February 23d, the second winter lantern exhibition would occur, and requested all members to prepare for that event by sending in slides, by February 19th, to him. Mr. Beach stated that there would be a presentation prize print exhibition on April 13th, and that all pictures to be on exhibition on that occasion must be delivered by the 3d of April.

The Librarian states that he has received some books from Messrs. Anthony & Co. Four editions, one in French, German, Spanish, and Portuguese, of Mr. T. C. Roche's book, entitled "How to Make Photographs;" also, "El Rayo Solar," a Spanish translation of "The Silver Sunbeam," by Dr. J. Towler; and a book entitled "Instruction for Beginners in Photography," by Benjamin Wyles. This was presented by the *Scientific American*.

I have a letter here from Colonel A. C. M. Pennington, a portion of which the Secretary will read:

FORTRESS MONROE, VA., January 20, 1886.

DEAR SIR,—I acknowledge, with thanks, the papers sent. I have taken considerable interest in the published proceedings of your society, as they appear in the BULLETIN. It is doing good work, and I wish you every success.

Yours truly,

A. C. M. PENNINGTON.

With that letter Mr. Pennington also sent me a very comical photograph, which Mr. DuBois will pass around. It pictures to us very vividly the manner in which some of the "darker" boys around Fortress Monroe attire themselves.

The subject which we have before us this evening will be on "Enlarging." I will ask Mr. Spaulding to take the chair.

Mr. PARSELL—If it is not out of order, I would move that a vote of thanks be tendered to Mr. Rich and Messrs. Anthony and the *Scientific American* for their donations.

The motion was seconded by Mr. Walker and unanimously carried.

Mr. Spaulding then took the chair.

Mr. BEACH then read a paper entitled "The New American Permanent Bromide Paper for Positive Prints and Enlarging." [See pages 112 and 146.] Coming to the experiment described in his paper, of squeegeeing the prints on to hard rubber, Mr. Beach paused, and taking up a large rubber sheet in one hand, said: There are the pictures with the face side against the rubber. The rubber is very highly polished. It is what is termed "hand polished." In order to take the picture off, you take hold of it at one corner, and pull it off in this fashion [indicating], and you will perceive that it has a very high gloss. You simply take the wet print after it is fixed, and put it on the hard rubber. If you let it dry without putting it on the rubber, it will have a dead surface.

Now we will turn the lights down and try the experiment of enlarging as I have detailed, and after the exposure has been made the development will immediately occur. On account of the vibration of the floor, I would request that every one keep as quiet as possible at the moment of exposure.

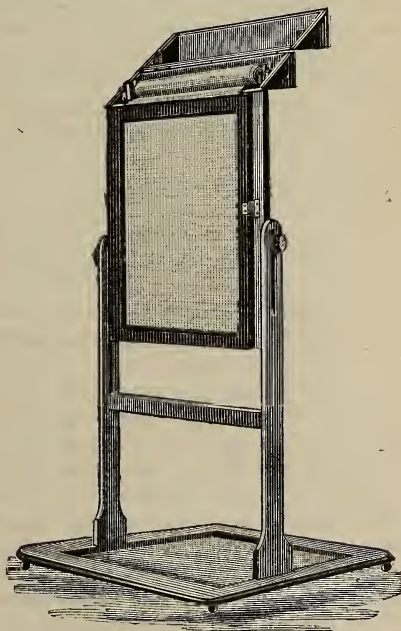
The lights were turned down and Mr. Beach then started the lime light in the lantern and said: Now you observe the image on the screen. We will now put the red cap on the lens, and you will see the red image. That is non-actinic and will not in any way affect the paper. Now [going to the enlarging easel] he continued: On the side of this box on top of the easel are two latch hooks, which hold the cover closed. Throwing these hooks back we open the cover and taking hold of the free end of the roll of sensitive paper, draw it down over the face of the screen, [which Messrs. Beach and Baker did]. It is now in the right position, and we simply shut the clamping frame which holds the paper smooth.

[The exposure was made and the sheet cut

off and immediately developed by Mr. Baker, the picture coming out very successfully.] The lights were now turned on and Mr. Beach explaining about the box, holding the roll of paper, said: This box, you will observe, has a little latch, and you simply undo that and then take the whole thing right off. By unscrewing those thumb-screws you can raise the screen at any height you wish, to suit the height of the camera and picture. Then in case you want to make a small picture, you put this kit in there, or right in over the other frame, which has a rabbit edge, and hold it by a thumb-screw. You will notice that sheets of paper can be used as well as rolls.

At our last meeting we had an experiment of photographing the audience by the magnesium light, and I have a few copies here—two copies—one from each plate, which I will pass around, and any members who wish copies can communicate with me. Mr. Newton made an exposure at that time. [Addressing Mr. Newton] Did you succeed in making a picture of the audience with your camera at the last meeting?

Mr. NEWTON—Yes, sir; I got a negative, but not one that I am very proud of.



The above cut shows the general construction of the easel, with the upper part of the supply box open and the roll of paper inside.

The next subject on the programme is a matter which is brought forward by the Question Box Committee, and as our Secretary is



absent, I will read what is stated here. Dr. Janeway, who is Chairman of the Question Box Committee, I am sorry to say is unable to be present to-night, owing to the death of General Hancock, and requests that this paper be put before the Society. Following this paper there will be a discussion on the subject to which it relates

The question proposed is:

*What is the best developer for rapid exposures? Shall I use a strong or weak one, or one of one or two solutions?*

The Committee on the Question Box take great pleasure in presenting the above, from an anonymous questioner, to the society for discussion, evincing as it does something more than mere curiosity—a search after facts rather than a desire to reinforce a preconceived opinion either of the questioner or some one whom he has been asked to pin his faith upon. The question itself, taken either as a whole or in some one of its natural subdivisions, is and has been engaging the attention of many of the first photographers of the world for but a comparatively short period. The rapid strides that have taken place in the manufacture of extremely sensitive dry plates, and the consequent necessity of very much shorter exposures, stimulating the inventive genius for some mechanical apparatus to produce this end, compels us to look this question fairly in the face and settle upon, to the satisfaction of ourselves at least, what is the best developer, or the best way of handling the chemicals at our disposal for development.

Up to within a comparatively short period, the general belief of the photographer was that the quicker the exposure the stronger must be the developer used, and in the hands of the veteran, beautiful negatives were and are produced, because his experience taught him what to expect and how to realize his anticipations. But we fear that many a tyro amateur, with his quick shutter or his detective camera, failed to have his hopes end in fruition, and saw more than the first dozen of his very rapid plates ruined—either fogged by development, or so weak and thin that all the intensifiers that he ever read about would not bring them up to the desired density or detail. It was doubtless in a great measure due to these failures, and consequent heart-aches, that the second part of the question, “strong or weak?” made its appearance, and many amateurs plunged boldly into a series of experiments to solve the vexed question (especially vexatious to many) to their own satisfaction, even if they failed in convincing

others. As the subject stands now, it is not settled, but each side has its own band of earnest advocates.

Mr. C. Faber says, in a communication to the Belgium Photographers’ Association, that this question has been often put to him, and that for the last three years he has found nothing that can be compared to the concentrated developer of Dr. Eder:

Neutral oxalate of potash.. 60 grams.

(1 ounce,  $7\frac{1}{2}$  drams.)

Sulphate of iron..... 20 “

(6 drams.)

Water..... 100 “

(3 ounces,  $3\frac{1}{2}$  drams.)

Neutral oxalate of potash is dissolved in boiling water, and this solution is kept at a temperature between  $194^{\circ}$  and  $203^{\circ}$  F., while sulphate of iron is dissolved in it. It is then set aside for twenty-four hours and the clear liquid decanted off the crystals that have formed at the bottom of the bottle, and is ready for use. He says that it is the most energetic developer for gelatino-bromide plates. In the next sentence he says: If the action of this developer is found to be too rapid, it suffices to dilute it with more or less water. By adding an equal volume of water, we obtain a bath which acts still more rapidly than the developer made by the usual formula.

That the advocates for a weak developer are numerous, can certainly be seen in the current photographic literature of the day, and certainly many beautiful results of their work are proudly exhibited to be admired, as they deserve to be. Quite recently, the advantage of using two solutions, instead of a combined one, has been strongly advocated by many earnest workers and experimentalists, who claim for this method a greater control of the process of development, and a certainty of results not to be obtained by any other.

A sort of cross, or half way, between the one and two solutions has also been proposed. That is, by giving the plate a bath of water and then placing it into a combined solution, Mr. Eugene Albert, in a plea for over-timing, says that when he cannot over-time, or, in other words, when he makes a rapid exposure, that after letting the plate lay in plain water for ten minutes, covering it up (of course a decidedly necessary procedure), he then washes it by pouring water over it, and then puts it into the combined developer. He further says that it is strange, but it is a fact, that the washing, after removing the plate from the plain water, facilitates the development.

Before submitting this question to the society for discussion, and which your committee



hopes will be a free and full one, they would state that the question of temperature of the developer is engaging the attention of our brethren in Chicago, arising from a statement made by Mr. W. D. Payne, of the Acme Dry Plate, regarding the effect of increasing the temperature of the developer to a constant one of between 70° and 80° F.

Dr. John Nicol, of the *Photographic Beacon*, says that from several experiments he has made, he has no doubt that the benefit derived from the employment of the warm developer is not confined to the shortening of the time occupied for development, but that it also extends to the ability of making an equally good negative with a much shorter exposure than if the developer used had been cold.

JOHN H. JANEWAY,  
*Chairman Question Box Committee.*

Mr. BEACH—I call upon Mr. Newton to give us his experience in regard to the best method of developing an instantaneously exposed plate.

Mr. NEWTON—I know people who can ask questions all day that they could not answer themselves, or any one else, and I say, frankly, in answer to the question that is propounded here, "What is the best developer for developing dry plates?" that I don't know. I don't know of anybody who does know.

Mr. BEACH—The question for discussion is, "What is the best developer for rapid exposures?"

Mr. NEWTON—Yes, sir; I understand. I do not know what is the best developer for a rapid exposure. I have tried probably thirty different developers such as are put up in packages by manufacturers of dry plates. They all have a formula which they send out with their plates, and they all claim, so far as I know, that each and every one of them is the best. Now, if I should say that some one of them is better than any of the rest of them, it would be my say against thirty who say theirs are better than any that I could compound.

I have tried all of those that have been put up (that is about thirty) and I find that they differ a little in their construction or their constitution, but in the result there is not so much difference.

Now the oxalate of potash developer works in a very small compass. That is, when you have got it saturated you have got the maximum possibility of strength in the oxalate of potash developer, and on a very short exposure it is incapable of bringing out a picture

anything like what an alkali developer can bring out.

You are environed, therefore, within that saturated solution.

(*To be continued.*)

## SECOND WINTER LANTERN EXHIBITION, FEBRUARY 23, 1886.

The exhibition was held at the Society's rooms, 1260 Broadway, on the evening of February 23d, and was largely attended, many ladies being among the audience.

The lantern was in charge of Dr. P. H. Mason, Chairman of the Lantern Slide Committee, who was assisted by Mr. George H. Ripley and Mr. C. W. Dean. Mr. Beach, standing near the screen, announced the title of each picture as it appeared.

The exhibition, as arranged by the committee, embraced, first, a series of thirty slides contributed by the Pittsburgh Amateur Society; then miscellaneous views sent by members; and lastly, some fifty selected slides from the negatives owned by the International Photographic Exchange Club, making in all about one hundred and fifty. Several of the Pittsburgh Society's views showed to good advantage under the powerful lime light; those perhaps which attracted the most attention and elicited favorable comment were "Opening Day at Davis' Island Dam," "Davis' Island Dam," two pretty views; "On the Yonghehomy River;" "Head of Lincoln in colored flowers, Allegheny Park;" "The Old Mill at Fall City;" "Aunt," representing an old darky leaning against a stone fence; "Family Group at Home," a lot of curiously and raggedly dressed children standing by the road-side in front of an old, broken-down but located in some woods; and lastly, "In the Snow," a beautiful snow picture, and one which took the prize for ordinary transparencies at the recent exhibition of photographs at Philadelphia.

The peculiar effect of the sunlight passing at an angle through the branches of the trees upon the freshly fallen snow, brought out in strong relief the fresh foot-marks which had just been made, and altogether composed a picture which was exceedingly natural and pleasant to look at.

Several instantaneous views made by Mr. George H. Cook were next shown.

Six very interesting slides of locomotives under full head-way, with an abundance of steam and smoke issuing from their smoke-stacks, made by Mr. Bishop, and loaned by

him to Mr. Beach for this occasion, were remarkable for their sharpness, excellent detail, and good location on the plate. They not only were good technically, but each formed a picture. A combination picture, consisting of a locomotive coming around a curve at the foot of a small hill; on the side of the latter were standing three young ladies in the act of waving a handkerchief to the passing train. It was a clever arrangement when it is understood how it was done. On one half of the plate was exposed the locomotive and track from one negative, on the other half, the side hill with the ladies in the foreground, from a second negative; and this was so neatly and accurately done that the place of joining could not be seen. After the two separate exposures had been made, the plate was developed. The only peculiarity noticeable was that the ladies were a little larger in proportion than the locomotive, but as a picture it was very pretty, and suggested what can be done in this line.

Several good chloride slides by Mr. L. P. Atkinson were shown, a view near Lake George, entitled "Cottage by the Lake" being very pretty. In addition to these were duplicate slides, intended to illustrate the difference in tones which are so easily obtainable with chloride plates. The slides were thrown alternately on the screen. The process Mr. Atkinson employed was to expose a chloride plate by contact to a negative in the usual manner, develop it until all the details in the high lights appeared, and then wash it well in water, and by the yellow light immerse it in a toning bath.

For rich, warm brown tones, which appeared to be the most pleasing on the screen, he employed the following:

*Acetate of Soda Stock Solution.*

Chloride of gold .....	15 grains.
Acetate of soda .....	300 "
Saturated solution of {	7 minims
chloride of lime.... }	or drops.
Water .....	7½ ounces.

For toning, take of the

Acetate stock solution....	2 ounces.
Water .....	12 "

Several slides can be toned in one solution at one time, and it takes but a short time, provided the gold used is of good quality. After toning, the plates are washed and fixed in the usual hypo fixing bath.

For purple, or black tones, which are obtained according to the time the plate is left in the bath, the following is recommended, which should be used fresh after it is cool:

*Chloride of Lime Bath.*

Chloride of gold .....	10 grains.
Powdered chalk .....	20 "
Saturated solution chloride	
of lime .....	3 drops.
Hot water .....	20 ounces.

The facility in toning to any desired color, in addition to the absolute clearness obtainable in the high lights, places the chloride plate in the front rank for lantern slides.

A slide made from Mr. Francis Blake's negative of his much-admired cattle picture was thrown on the screen, and produced a good effect.

A number of new excellent marine views were shown by Mr. Mapes, he having been particularly clever in the shots made with his detective camera.

Perhaps the slides by Mr. Mapes which possessed the most artistic merit was of a "Rustic Bridge in Prospect Park," and "Rocky Shore, Squirrel Island, Maine." They certainly pleased the audience, and therein showed that the maker, though young, will soon become an expert in slide making.

Dr. P. H. Mason showed a slide, entitled "The first Senate House in New York State, Kingston, N. Y.," which was much admired. He stated that it was made from an old wet-plate negative, yellow with age, and of such a character as to make it seem impossible that a good slide could be obtained. Another attractive slide was a copy of the picture "Priscilla," which appeared in the last Christmas number of the *Illustrated London News*.

Several chloride slides were next shown, made by Mr. Joseph P. Beach from negatives made by President Beach.

Following these were shown the slides sent by Mr. G. H. Ripley, made upon the new Ripley Transparency Plate, all having been developed with the pyro, soda and potash developer, and comprised the selected English views belonging to the International Photo Exchange. Considering the difficulties which had to be overcome in making duplicate negatives from weak transparencies, it was remarkable how well the new slides came out, many made from transparencies being very fine.

A few of the above were slides which had been exposed by Mr. Ripley, but were developed in another place by Dr. Mason; and Mr. Beach called attention to their fine quality as showing the success of the plan, namely, the exposing of the sensitive plate by one person behind the negative, and its development by another; it was found, after the proper ex-

posure had been ascertained, any number of duplicate sensitive plates could be exposed behind one negative, and afterwards be developed by different persons with a certainty of success.

At the termination of the formal programme the President announced an adjournment, but gave notice to any who cared to stay that a few slides brought by other members would be shown. He then operated the lantern, and several slides by Mr. Brush, Mr. A. Bedell Benjamin, Mr. R. Baker, Mr. Levison, Mr. McNeil and Mr. D. Wright, were passed through.

Mr. D. Wright showed a slide of fishermen landing in the surf at Seabright, which was especially good.

The smooth working of the lantern and the careful management of it by Dr. Mason, together with the great variety of pictures shown, made the exhibition as a whole quite interesting and entertaining.

At 10 P.M. the audience dispersed.

NOTE.—Members are reminded that the time for sending in prints for the Presentation Print Exhibition, to be held on April 13th, expires on April 3d, and it is hoped a large and interesting collection of pictures will be shown.

Members are earnestly requested to prepare pictures for the occasion.

## What Our Friends Would Like to Know.

*N.B.—We cannot undertake to answer communications of a technical character except through the columns of the BULLETIN. Correspondents will please remember.*

Q.—G. R. writes:—Will you please inform me, through the columns of the BULLETIN, if I can make good crayon work over the permanent bromide paper enlargements? If so, is there any particular paper for that other than the ordinary kind, or any particular way to work it?

A.—Anthony's patent crayon paper is a gelatino-bromide surface, specially prepared for the crayon artist, and full directions are given with each package. Eastman's permanent bromide paper can also be used for this purpose, quality C being best suited for crayon work.

Q.—H. S. J. writes:—What is meant by "equivalent focus" and "back focus" as used by catalogues in describing lenses?

Is the "equivalent focus" the "principal focus" or focus for parallel rays?

If the "back focus" is the "conjugate focus" of the lens, at what distance from the lens is the object placed when determining it?

A.—The equivalent focus of a lens is practically the focus for parallel rays (the sun's rays for example). The back focus is the distance from the back lens of the combination to the ground glass when parallel rays are in focus on the latter.

Q.—C. B. asks:—Will you please give, through the columns of the BULLETIN, the way to mix water colors for painting backgrounds so that the color will not change in drying.

A.—Mix the colors in a weak solution of gelatine, say five grains to the ounce of water.

Q.—A. C. K. writes:—Would you be kind enough to give me Newton's formula for washing albumen prints by using nitrate of lead.

A.—We do not know Newton's formula; but a solution of ten grains to the ounce works well.

Q.—J. J. P. writes:—I have a solution of silver in a bottle into which I put a rubber tube, not thinking of the sulphur in the rubber, and it has imparted to the solution a yellow color. Will that affect the solution? I use it for sensitizing albumen paper. Please tell me what I can do with it, and how I can precipitate it. Answer through columns of BULLETIN.

A.—We think the best thing you can do with that solution is to precipitate it with sulphide of potassium and nitric acid, and work up the precipitate by one of the methods in the books. In other words, it is useless, and you must make a new silver bath for sensitizing your paper if you wish to get good prints.

Q.—C. H. T. writes:—Can any one tell why a dry plate, exposed in an ordinary printing frame back of a negative (exactly as you would albumen paper), should make another negative instead of a transparency?

Should like to hear from different leading photographers.

[Perhaps some of our readers would like to answer the above query. We shall be glad to afford them an opportunity in this column].

Q.—J. M. B.—When we used to precipitate hypo fixing solution used for *wet plates*, we found no difficulty in precipitating it, but the solution that gelatine plates are fixed in does not seem to act the same. I made it acid with nitric acid after putting in sulphuret of potas-



sium, but still it does not go down, or at least there are particles floating in the solution. Please give me the best method of treating it?

*A.*—You will probably make the precipitate settle better if you boil the solution that contains it in suspension. The trouble is no doubt due to some gelatine that has gone into solution in the bath.

*Q.*—J. R. K. writes:—Will you please inform us about using the paper for copying maps, etc., which is the reverse of the blue print process, and also if it requires different apparatus.

We are copying our tracings by the "Blue Print" method, but would like to try the reverse, giving dark lines on a light ground.

*A.*—The reverse of the blue print process that you use is very troublesome, and requires a greater number of operations. It has been used by several large engineering firms in and near New York, and has been abandoned as too troublesome.

*Q.*—E. W. H. writes:—As I cannot find in any photographic publication directions for printing on canvas for oil portraits, I consequently take the liberty of requesting you to inform me, if possible, of some good and practical process or method?

*A.*—A method of preparing canvas for this purpose can be found on page 469 of the "Silver Sunbeam," which is issued by our publishers.

*Q.*—F. R. writes:—Will you please tell me through the BULLETIN what the rate of postage is at the present time on photographs?

*A.*—Photographs are mailable as third-class matter, the rate for which is one cent for each two ounces or fraction thereof. This is from the Official Postal Guide.

## Views Caught with the Drop Shutter.

P. H. ROSE, the popular photographer, of Galveston, Texas, has concluded to open a gallery shortly in Providence, R. I., where he will be supplied with Dallmeyer lenses and apparatus from the factories of our publishers. We shall give notice of his final location at a future date.

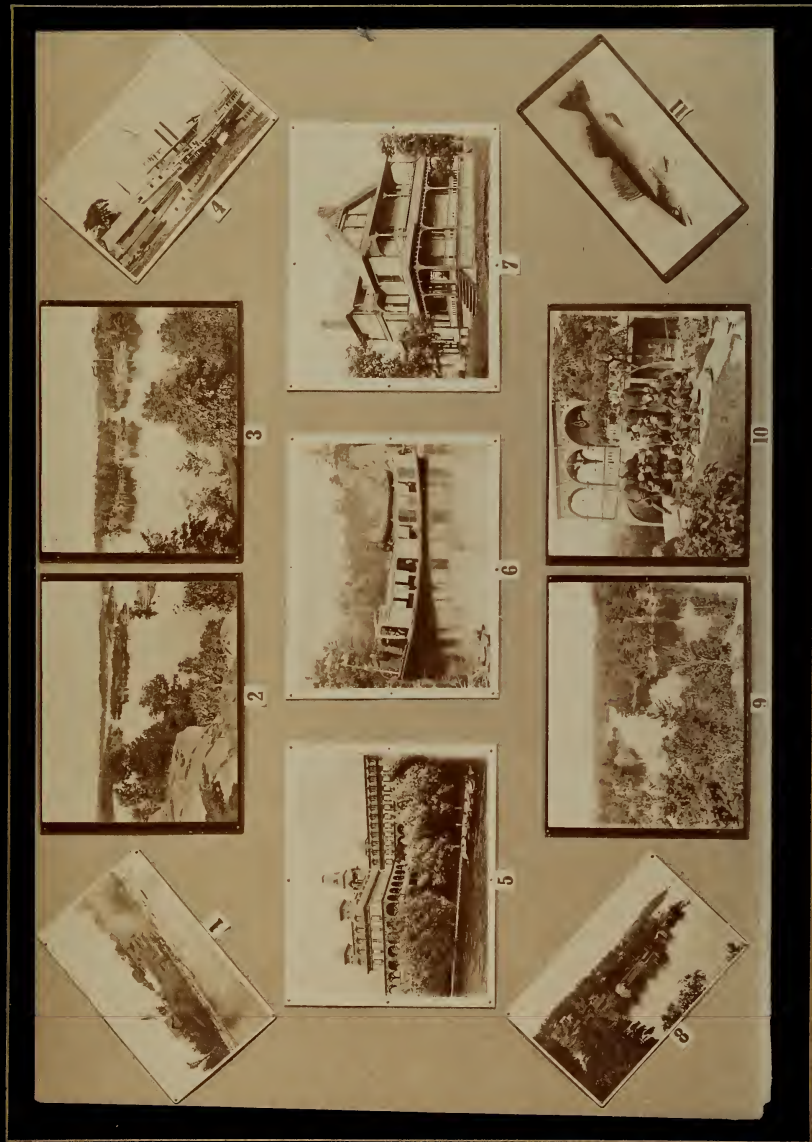
DAVISON is still at Deep River, Conn., where he is apparently carrying everything before him in the way of taking pictures; our local advices speak of his continued success.

At the meeting of the PHOTOGRAPHIC MERCHANTS' BOARD OF TRADE, the following officers for the ensuing year were elected: *President*, DAVID TUCKER; *1st Vice-President*, BENJAMIN FRENCH; *2d Vice-President*, G. A. DOUGLASS; *3d Vice-President*, R. B. MULLETT; *Secretary*, D. K. CADY; *Treasurer*, H. A. HYATT.

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NEGATIVES ON STANLEY DRY PLATE,  
WITH PLATYSOOPRE LENS.

# Gems from the Thousand Isles.

By A. C. McElroy.

PRINTED BY H. O'NEIL, ON THE N. P. A.  
PENSE EXTRA BRILLIANT ALBUMEN PAPER



# ANTHONY'S Photographic Bulletin.

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Prof. CHARLES F. CHANDLER, Ph.D., LL.D., *Editor.*

ARTHUR H. ELLIOTT, Ph.D., F.C.S., *Associate Editor.*

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APRIL 10, 1886.

Vol. XVII.—No. 7.

## DEVELOPING RAPID EXPOSURES.

WE are constantly asked the question, "How shall I develop an instantaneous exposure on a rapid plate, say Stanley's?" There is a very unfortunate and careless way of using the terms rapid, instantaneous, strong developer, weak developer, and the like, which must always lead to confusion. One man will call an exposure "rapid" when he uses the smallest stop and exposes by taking the cap off and replacing it quickly by the hand. Another will use a medium stop and the same method of exposure. Still another will use a large stop and a drop shutter, or even a rapid shutter like the Prosch at full speed. Now, it is obvious that the character of the development is entirely different in each of these cases, always assuming the light to be the same in every instance. But here again is another difficulty—the light is often not the same. One man talks about making exposures with bright sunlight on objects upon the water, or views where water forms a large proportion of the picture, while another refers only to groups or landscapes where water is absent. In these latter cases an entirely different treatment of the development is necessary to secure good negatives.

As is well known, the amount of light that reaches the plate will determine the quantity of actinic work done upon the sensitive surface, and this in turn will determine the amount of work to be done by development. Therefore, the actinic power of the light being the same in both cases, more work is done upon the plate with a large stop than a small one, the time of exposure being the same, and when a large quantity of actinic energy has thus acted, the developer will have less work to do as its share of the production of the negative. If a small stop is used, the time of exposure being the same, the actinic work done will be small, and the work done by the developer will have to be great. In discussing the question of the development of rapid exposures, it is therefore absolutely necessary to come to some understanding as to the meaning of the term "instantaneous" as applied to them. Leaving out of the question the actinic power of the light at different seasons of the year and hours of the day, we must confine our attention to the problem in hand, the proper developer to apply to a plate that has received much or little light action in a given time. For the speed of the exposure being the same, the amount of light received by the plate determines the force to be applied in the development. The question of the actinic power of daylight is one of individual judgment, and no amount of writing or discussion can impart this. But the circumstances under which the light is acting are pretty well defined and can be in a measure formulated. In landscapes in summer the greater number of rays that reach the

sensitive plate are of the less actinic character, grays, browns, greens; while in winter landscapes with snow, we have more of the actinic rays. In marine views, on the other hand, the reflections from the water bathe the objects in a perfect flood of light, consisting of rays of all characters; and, furthermore, the objects upon the surface of the water generally reflect more white and less of colored light than those upon land. From a consideration of these facts, it is evident that, given the same exposure, more actinic work will be done upon a plate exposed upon subjects on the water than those upon land. It is therefore necessary to acquire some idea of the amount of work done by the light upon the plate if we are to apply the developer rationally and secure good negatives.

Having given some idea of the considerations to be remembered while making the exposure, we will now take up the question of development. And at the very beginning, let us say that we do not want to talk about under-exposed plates. The plate that has not received enough light action to give a picture in twenty minutes under development, is not worth the time spent upon it. We do not here mean that a thin picture is not worth working at, but a picture that lacks detail. You may have a thin picture with plenty of detail, and this will give a good negative under proper treatment; but a plate that has received too little actinic action will never give a good negative. Some one will naturally ask: "Well, what is the correct amount of exposure?" Our answer is that it depends entirely upon the brand of plates you use. Some plates are so sensitive that a small stop and a rapid shutter will give sufficient exposure at four o'clock in the afternoon of these days, with fairly good (not bright) light, that a good negative can be obtained in five minutes. This is true of the most rapid plates now made (Stanley's Lightning for example). With less rapid plates, and the same exposure, the lens would have to be nearly wide open, while with many plates and the latter exposure, no picture would appear in thirty or forty minutes. Such plates we should call under-exposed and their destiny would be the waste box.

Nothing but a few experiments with a given brand of plates will teach one how to use them. It is folly to set down any hard-and-fast rule for all kinds of plates. During the time of the experiments on exposure, great care should be taken to form a judgment of the quality of the light and its mode of falling on the subject.

Having determined the right exposure for the given brand of plates in use, the development is moderately simple. With the most careful judgment as to light, there is one thing that will often happen, that is, over-exposure. With this possible contingency in mind, we proceed to develop a plate somewhat in the following manner:

Into one dish pour the mixture of the developer in the proportions given upon the formula that accompanies the brand of plate in use. These formulas are generally about right, that is, those made with either soda or potash carbonates as the alkali. The soda developer is less likely to frill the plates than that made with potash, but the latter will often bring out detail not obtained with the former. In making up a potash developer from a soda formula, it requires one-third more potassium carbonate to make it equivalent to the amount of sodium carbonate given. In addition to the regular formula, which should contain only a little bromide of potassium (say 1 grain in 4 ounces), make up another bath in the same manner as the first, but with more bromide (2 grains to the ounce), and place the dish alongside of the first one made up. The plate is first placed

in the normal developer and its progress watched. If the development begins in about one minute and only the high lights come out, continue the development until all the detail in the shadows appears. Then wash the plate pretty thoroughly in running water, and place in a bath of alum and citric acid, to remove stains. In this development take care that the high lights do not begin to fog, for if they do the negative will lack brilliancy. If the detail will not come out without fogging the high lights, the development may be continued a little longer, but the result will be a poor negative, for the plate that shows this characteristic is under-exposed, and we think but poorly repays any time spent upon it in development. It may be improved by intensification, but not by further development.

If, on the other hand, in placing the plate in the normal developer, the image appears quickly and contains considerable detail within one minute after putting it in the bath, remove it at once and place it in the developer containing much bromide. The image obtained quickly in the normal developer will be thin, and by placing it in the bromide developer and allowing it to remain there it will gradually become more dense, and in ten or fifteen minutes a good negative will be obtained.

At another time we shall have something to say about ferrous oxalate development

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#### EDITORIAL NOTES.

WITH this issue of the BULLETIN we present our readers with a letter from an esteemed correspondent in England. We have only been able to secure these ENGLISH NOTES at considerable expense, and feel assured that they will prove highly interesting to our subscribers. This is one of the many ways in which we are trying to keep the BULLETIN at the head of American photographic periodicals. We have other surprises in store for the many friends who have seconded our efforts by increasing our subscription list, and which will appear in due time. Still continue to help us and we shall be able to give you a full return for every encouragement. The BULLETIN aims to be second to none.

WE have just received the Report of the Naval Observatory, at Washington, upon the Annular Eclipse of the Sun in March, 1885. It contains a very interesting comparison of the relative value of collodion and gelatine plates for this kind of photographic work. This comparison shows that the gelatine plates are reliable where measurements are to be made upon the negative, and verifies the remarks of Dr. Eder, who made a similar comparison some years ago, and said "good gelatine plates are thoroughly reliable for this class of work." In other respects the plates are classified as follows:

Collodion—Excellent, 3; good, 10; passable, 14; worthless, 15. Total, 42.

Gelatine—Excellent, 17; good, 14; passable, 7; worthless, 10. Total, 49.

*Secretary* McMICHAEL, of the P. A. of A., writes us: "Space on diagram of exhibition is nearly all sold." "Indications are that there will be a great deal of competition for the medals." Those who wish to exhibit at St. Louis should lose no time in applying for space, and competitors for medals should have their work well under way at this time.



WE are also reminded by correspondents that in our statement of the prizes offered by our publishers we do not state when the pictures shall be made. Our publishers have therefore decided that the pictures shall be made from negatives obtained since the Buffalo meeting of the P. A. of A. See notice on another page.

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THE recent improvements in rapid printing paper made with gelatine emulsion, have led to the use of automatic machines for the production of positives. A continuous roll of paper is fixed in a machine, and by means of clockwork, exposure to a gas flame is made mechanically and for a definite time, the proper time having been determined by some previous experiments. It is said that in a Glasgow gallery two hundred cards or cabinets can be printed in an hour. We have not yet seen any of these prints, but the scheme appears feasible.

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THE late Dr. Henry Draper was well known as a thorough investigator in stellar spectra. As a memorial to her distinguished husband, Mrs. Draper has made provision for continuing his researches at Harvard Observatory under the direction of Prof. E. C. Pickering. Some very interesting results are now being obtained, and much more is expected in the future. Prof. Draper was the most prominent worker in this line of investigation, and his wonderful photographs of spectra are known all over the world. It is extremely fortunate that Prof. Pickering should have been selected to carry on these researches, because of his great experience in this class of photographic work; and we think that Prof. Draper's mantle has fallen on fit shoulders.

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THE Pittsburgh Amateur Photographic Society proposes to hold, about the middle of April, an exhibition of lantern slides, photographs, and transparencies. The exhibition will be confined to members of the society.

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WE print on another page the new rules of the Postal Photographic Club; also the program for the subjects for the albums of 1886. Those of our readers who are members of the club should look over the new rules, as we note a number of changes.

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#### NOTES ON EMULSIONS.

BY PROF. SPENCER B. NEWBURY, *Cornell University.*

HAVING had occasion during the past two years to use a large number of dry plates for scientific work, I have been led to make many experiments to determine the conditions necessary to secure absolute uniformity in respect of sensitiveness and clearness in the resulting plates. Although a vast number of formulas for emulsions have been published, it may be that the experiments I have made on the effect of different proportions of ingredients and different methods of manipulation may fulfill a useful purpose, and help some fellow-workers in this field out of some of the difficulties which I have encountered and surmounted.

The most complete book we have on the subject is undoubtedly Captain Abney's "Photography with Emulsions." Chapter xxvii of this work has been the basis for these experiments, and, after some practice, it has been found

possible to obtain admirable results by adhering pretty closely to the directions therein contained.\* Some modifications have, however, been found advantageous in my hands, and some details which are omitted in Abney's outline have been found essential to success. It may be stated, however, that no formula can be adhered to absolutely, but that each experimenter must gradually work out his own method. A given process will always produce different results in different hands. It is only on this theory that I can account for the fact that certain operations in emulsion-making which are referred to as easy by Abney, Eder, and other well-known authorities, have proved to be extremely difficult; while certain precautions, upon which the same authors insist, have been found to be non-essential. In the following pages the different stages of the process are taken up in order.

1. *Materials*.—Nelson's No. 1 and Simeon's hard gelatines, as recommended by Abney, have been found to be uniform and reliable. Potassium bromide has given me better results than ammonium bromide, owing to its being more uniformly neutral.

2. *Emulsification and Boiling*.—None of the methods described by Abney have proved entirely successful in my hands. Addition of the silver in solution to the gelatine and bromide solution, either in a fine spray or in successive portions according to the Paget prize formula, gave in every case a small amount of coarse precipitate, which could only be removed by very long standing and careful decantation, and which, if not completely removed, produced "measles" in the resulting plates. Variations in proportion of gelatine and temperature produced very little effect. After many experiments, the addition of alcohol before emulsification, as suggested by W. K. Burton (*British Journal Almanac*, 1883, p. 198), furnished a happy solution of the difficulty, and was found effective in all methods of mixing. With the "reverse method," given by Abney, curious results were obtained. If the silver were added to the gelatine as directed, the acid necessary to neutralize the latter being added to the bromide solution, the finished plates, owing to the action of the silver nitrate on the alkaline gelatine, gave dense red fog and blackened in the light like silvered albumen paper. On the other hand, if the gelatine were neutralized before adding the silver, no red fog was produced, but more or less coarse precipitate resulted. The addition of alcohol to the gelatine solution, however, corrected this fault.

I have always obtained good results by adding the silver in crystals to the gelatine and bromide solution, especially with the use of alcohol; and by combining this method with the "reverse mixing," an extremely simple and wholly satisfactory process of emulsification is secured. The gelatine is dissolved in the whole of the water used, and carefully neutralized. By ruby light the silver nitrate in crystals is added, and dissolved by shaking; then the bromide in crystals is added, the shaking continued for a couple of minutes longer, and the emulsification is complete. This method gives an emulsion which is absolutely free from coarse precipitate, shows a deep ruby color by transmitted light, and will give maximum sensitiveness with half an hour's boiling.

To obtain great sensitiveness, the closest attention must be paid to the

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\*This article is to be regarded as a series of notes on Abney's method of emulsion-making, and I would here acknowledge my indebtedness to that able investigator for the admirable groundwork contained in his book, which furnished the starting-point for these experiments.

amount of acid used. I find that Nelson's No. 1 gelatine is always alkaline, and also that the amount of alkalinity is pretty constant in different samples. To render the gelatine distinctly acid, so as to redden litmus paper, requires about 1 c.c. of 1 per cent hydrochloric acid solution for 1 gram of gelatine. I find that if this amount of acid be used, a slow emulsion is produced; while, if no acid be employed, fog is the result. The best results were obtained by using about half the quantity of acid necessary to produce apparent acidity, or about  $\frac{1}{2}$  c.c. to 1 gram of gelatine. It is evident from this, that neutrality, not acidity, is the condition to be aimed at.

Comparative experiments were made to test the effect of different proportions of potassium bromide to a given quantity of silver nitrate. In each case 32.5 grams  $\text{AgNO}_3$  were employed, which requires 22.75 grams KBr for complete precipitation. These trials were made before I had hit upon the method of emulsifying described above, and the resulting Warnerke sensitometer numbers are lower than I have since obtained; but since the different emulsions were prepared under exactly similar conditions, the results are not without interest.

	Weight of KBr to 32.5 grams $\text{AgNO}_3$	Sensitometer number with one-half hour's boiling.	Sensitometer number with one hour's boiling.
1.	25 grams.	10 clear.	13 foggy.
2.	27 "	16 "	
3.	28.5 "	19 "	19 granular.
4.	30.5 "	16 weak.	

These experiments furnish an explanation of the opposite views which have been expressed as to the effect of different proportions of bromide. Abney states that a large excess is conducive to sensitiveness; Eder maintains that a large excess prevents fog, but retards the conversion of the silver bromide into the sensitive modification. The above table seems to show that there is a certain proportion of bromide which produces the highest sensitiveness, and also that excess of bromide has the effect of preventing fog. In order to determine whether this action was sufficient to give a clear result with alkaline gelatine, experiment No. 4 (above) was repeated with the omission of the acid; fog resulted, however, as with smaller proportions of bromide.

With the proportion of bromide given in No. 3 (which is exactly that recommended by Abney), the conversion into the sensitive condition seems to be complete in less than thirty minutes' boiling. In a large number of trials, I have never found any gain in sensitiveness on longer boiling, but have frequently observed a tendency to coarseness or granularity of the film.

The proportion of gelatine used in emulsification has an important influence upon sensitiveness. I have been in the habit of using a little more water than recommended in Abney's formula, and have increased the amount of gelatine in the same proportion, using 8 grams Nelson's No. 1 gelatine and 300 c.c. of water to 32.5 grams silver nitrate. I find that if the amount of gelatine be reduced to 5 grams, the resulting emulsion gives plates decidedly wanting in density; while if the amount of gelatine be increased to 12 grams, a slow emulsion is obtained. These results confirm Abney's general statements in every respect.

*(To be continued.)*

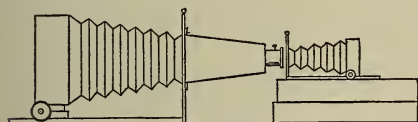


## A HINT ON THE USE OF THE PERMANENT BROMIDE PAPER.

THE coming of the permanent bromide paper opens up almost a new field in photography. Many ways and means are devised for working it successfully. It does away with the lugging around of large and heavy apparatus for the purposes of getting a good-sized picture.

As a rule with amateurs, one or two prints from the same negative supplies the demand. In order to get these of a satisfactory size, say  $8 \times 10$ , or even  $5 \times 8$ —heretofore it has been necessary to make negatives to correspond. Now with those made with the little camera that can almost be carried in one's pocket and the bromide paper, prints to any size within reasonable limit, that in some respects excel the albumen, can be produced.

Up to a certain point I am of the opinion that these enlargements can be most successfully made in the camera—that is in a large camera; the one laid aside now that we are using the little fellow out of doors. In operating this way, it is easily understood that the camera must have a long pull, and in order to increase the distance from lens to focusing screen a frustrum of a pyramid, with



its base attached to the front of camera and lens mounted as shown in cut can be used. Now make a little frame,

with rabbet large enough to let in original negative, with a piece of ground glass, rough side out. Catch this to small camera as a plate holder; reverse the same toward a window, north light if possible, and elevate it to the level of the front of lens attached, as before stated, to the larger camera.

In the matter of time of exposure in enlarging this way, one must judge by the density of negative and be governed also by the size of stop in lens. The bromide paper does not in my hands seem to admit of the least forcing in development, and an under-timed print is of no use. There is not even the latitude of time that we meet in exposure of negatives. Lean rather toward over than under-time, and have control of the developer. Better still, have two solutions, one without bromide.

The results, if the operator is careful, will astonish any one; the quality of the finished print making it seem like a direct one from a large negative.

P. H. M.

## THE MAGIC LANTERN AND ITS APPLICATIONS.

BY L. H. LAUDY, PH.D.

(Continued.)

### ACCESSORY APPARATUS.

THIS includes the vertical attachment, the microscope attachment, polarizing elbow, and spectrum projector. Each requires special adaptation to the lantern, a knowledge of which is essential to those aiming to make the study complete. Little skill is required to make ordinary lantern projections compared with that necessary when using the above accessory apparatus. For you must possess a certain knowledge of each subject that the attachments are used to illustrate to make perfect projections, and should at all times be able to detect faults in the working of the apparatus. The latter remark applies more especially to polarized light and spectrum analysis, as the success of these experiments

depends upon careful manipulation, most of which is carried on in the dark. The hand therefore requires as much training as the eye, all of which can be accomplished by practice and a thorough knowledge of the apparatus.

*Vertical Attachment.*—For a large class of experiments, both in chemistry and physics, it is important that the object remain in a horizontal plane; this led to the invention of what is called the vertical attachment, and was first introduced by Duboscq in 1868. It is curious to note that so celebrated an optician should have omitted to interpose a condenser between the mirror and objective,

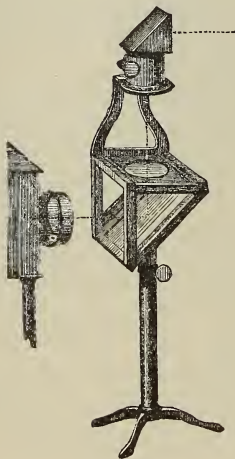


FIG. 23.

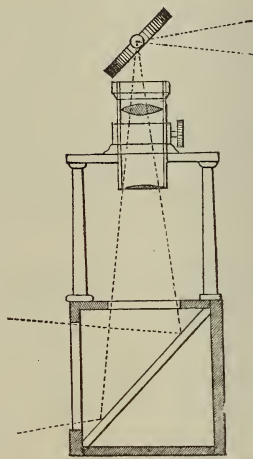


FIG. 24.

as is shown by the illustration (Fig. 23), which is copied from *Les Mondes*, vol. xxiv, page 650, 1870.

Edwin Smith constructed a vertical, by means of which he was able to exhibit

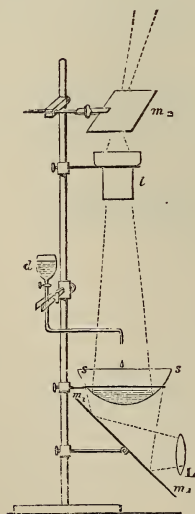


FIG. 25.

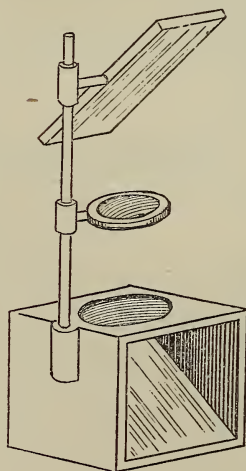


FIG. 26.

to a large audience the electrical phenomena in plants. This was in 1870, and was published in the *Chemical News*, February, 1870, page 90.

Professor J. P. Cooke, of Cambridge, Mass., made use of a vertical which differs in principle little from Duboscq's, and was used to illustrate lectures and project magnetic curves, an account of which is published in the *Journal of the Franklin Institute* for 1871, vol. lxii, page 408. (Fig. 24.)

Dr. R. M. Furguson constructed a simple vertical which can be readily put together, and is made mostly of apparatus found in the laboratory. The accompanying cut shows the arrangement, and was taken from the *Quarterly Journal of Science* for 1872, vol. ix, page 267. (Fig. 25.)

It consisted of  $L$ , lens from lantern;  $m$ , plate-glass mirror at an angle of 45 deg.;  $ss$ , glass saucer;  $l$ , a lens;  $m_2$ , a second mirror to throw the light upon the screen. This apparatus, simple as it is, was used to illustrate a course of lectures on Sound in the Edinburgh Museum of Science and Art.

A simple form of vertical, which can be made cheaply, consists of a box holding a mirror of plate-glass, 6 x 6, placed at an angle of 45 deg., with a support for lens and second mirror to reflect objects upon the screen. With this vertical it is possible to produce results quite good enough for class demonstration. (Fig. 26.)

All these were imperfect in construction, and failed to give satisfactory results, and it remained for Professor Henry Morton to first separate the ordinary lantern condenser into two elements, one before and the other after the reflecting mirror, by which the efficiency of the instrument was greatly increased. The principle is that if we place first so much of the condenser as will bring to parallelism the rays diverging from the source of light, they then pass on to the remaining lens after reflection exactly as they would have done had the condenser occupied its usual position. It will thus produce a field evenly illuminated, and the beam is the same as without the vertical, covering the screen to the edges

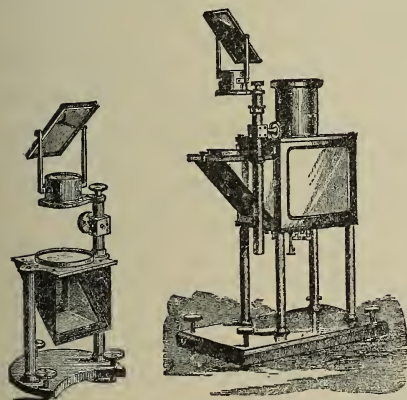


FIG. 27.

of the circle, and producing a picture sharp and well defined. (Fig. 27.)

With this apparatus it is possible to exhibit to a large audience many of the most beautiful experiments in the domain of physical science.

(To be continued.)

THE BULLETIN is growing more and more interesting, and the last number has an article in it which is worth five dollars to me. It contains not only reading matter for the photographer, but also for the mass, and every person who cares for science should be a subscriber.

H. J. SUTTON.

I AM glad to see that you illustrate every number, and I am more than willing to pay the little extra.

C. H. HABERER.

I SHALL always want the BULLETIN while I am in the photo business.

H. C. HOLLIMANN.



## THE LITERATURE OF PHOTOGRAPHY.

BY W. JEROME HARRISON, F.G.S.

As photography advances—and how rapid that advance has been—to take its place not only as an important industry, but as an art, and as the handmaid of the sciences, it becomes more and more necessary for those who desire to take part in the onward march to be cognizant of *what has been done*; that is, to become acquainted with the literature of the subject, and to know at all events where to refer for information. It is almost astounding that no attempts have ever been made to publish any lists of the books and papers which have been written upon photographic subjects; and to this hiatus may perhaps be attributed the fact that not one really good collection of such books is known to the writer. Surely our photographic societies ought at once to set about supplying this deficiency. The knowledge of what other workers have done, not only furnishes a point of departure from which new discoveries may be made, but will go far to obviate those rediscoveries and reinventions by which old lamps are continually being polished up and exhibited as new ones.

In laying before the readers of the BULLETIN the results of my researches into the bibliography of photography, I shall first consider English-printed books, arranged under their authors' names. Fortunately our language is one with that of our "brethren across the sea," so that the books of either nation are available for both. And let no photographer, amateur or professional, ever begrudge the money he spends in books. It will return him a hundred-fold in pleasure and success. If a man only reads the books, etc., he buys, I believe it is the very best investment he can make; at least I have found it so. Another mistake is to think that one book only upon a subject, or branch of a subject, is sufficient. "Many books, many minds," and each will throw light upon the other.

Captain WILLIAM DE WIVELESIE ABNEY, Corps of Royal Engineers, Fellow of the Royal Society, was born at Derby in 1843. After passing through the Military Academy at Woolwich, he received an appointment as Lieutenant in the Royal Engineers—the scientific corps of the army—in 1861, and was made Captain in 1873. His first work in teaching photography was done in connection with the School of Mining Engineers at Chatham; and the class for army officers which he has since then yearly taught, has carried off many medals at various photographic exhibitions—distinctions which, as a matter of fact, might well have been awarded to the gallant Captain in person. Captain Abney has long been connected with the Science and Art Department at South Kensington, where he now acts as Assistant Director. In 1874 Captain Abney was one of the scientific observers appointed to record the transit of Venus; and in 1883 he was awarded the Rumford Medal of the Royal Society for his researches in photography and spectrum analysis. In addition to the books named below, Captain Abney is the author of numerous papers which have appeared in the Transactions of the Royal Society and the *Philosophical Magazine*.

1871. *Instruction in Photography for Use at the School of Mining Engineers, Chatham.* 120 pp. Privately printed. Chatham. This book was printed in the printing school attached to the same establishment, and was not sold to the public.

1874. "Instruction in Photography." (Photographic Handy-books, No. 1.) 12mo. 2s. 6d. Second edition, 1875; third, 1876; fourth, 1879; fifth,

1882. Sixth edition, 340 pages, 55 wood-cuts, appeared in 1884. Price 3s. 6d. Published by Piper & Carter, London.

This is a thoroughly scientific and practical book; one in which the most advanced student will find much to learn.

1876. "Two Lectures on Photography," delivered at South Kensington. Illustrated. Paper covers. Macmillan & Co., London. 6d.

These lectures were given in connection with the Loan Collection of Scientific Apparatus exhibited at South Kensington in 1876.

1878. "Science Lectures at South Kensington." 8vo., illustrated. Two vols. (Lecture I and II, vol. i, pp. 1-32, are on photography. They are the same lectures as those published separately in 1876.) Macmillan & Co. 6s. per vol.

1878. "Emulsion Processes in Photography." (Photographic Handbooks, No. II.) 12mo. Piper & Carter. 2s. 6d. This edition is described in the preface as "a collection of those Photographic Emulsion Processes which have been received with most favor by experienced workers, with theoretical explanations of some of the phenomena."

1878. "Free Evening Lectures," delivered in connection with the Special Loan Collection of Scientific Apparatus (South Kensington) in 1876. 8vo. Lecture on Photographic Printing Processes, pp. 89-104. Chapman & Hall, London. 8s.

1878. "Treatise on Photography" (one of the series issued as Text Books of Science). 1881. Second edition. 12mo. 326 pp. 105 wood-cuts. Longmans. 3s. 6d.

This is an excellent book. As far as our gelatine dry plate process is concerned, it is, of course, out of date, but for everything else it is most useful. It should be used in conjunction with the author's "Instruction in Photography."

1880. "The Practical Working of the Gelatine Emulsion Process." 12mo. Piper & Carter. 1s. 6d.

This book forms a supplement to the volume on Emulsion Processes. Published in 1877.

1882. "Photography with Emulsions." A treatise on the theory and practical working of the collodion and gelatine emulsion processes. Second edition. 12mo. 248 pp., 17 wood-cuts. Third edition, revised and enlarged, 1885. Piper & Carter. 3s.

This is the principal book of reference used by those who prepare emulsions in this country.

1882. "Recent Advances in Photography," being the Cantor Lectures for 1882, delivered before the Society of Arts. This little book, or pamphlet, is published in two forms. 4to. 32 pp. Society of Arts. 1s. And 12mo. 72 pp., illustrated. Piper & Carter. 6d.

1885. "Photography and the Spectroscope." Two Cantor Lectures, delivered before the Society of Arts. 4to. 13 pp. Society of Arts. 1s.

1885. Article on Photography in the "Encyclopedia Britannica." 4to. Vol. xviii, part 72, pp. 821-840. Illustrated. A. & C. Black, Edinburgh. 30s. per vol. 7s. 6d. per part. This article is a masterly exposition of the subject. It contains an immense amount of information given in an extremely compact manner.

Besides the books named above, Captain Abney is the joint author, with Mr. H. P. Robinson, of the following work:

1881. "The Art and Practice of Silver Printing." (Photographic Handbooks, No. IV.) 12mo. 128 pp. 31 wood-cuts and frontispiece. Piper & Carter. 2s. 6d.

The charming little frontispiece of this book is a carbon portrait, a reduction of Mr. Robinson's famous picture, "When the Day's Work is Done."

There is yet another publication bearing Captain Abney's name, which, although its letter-press contains no photographic information, is yet well worthy of a place in every library.

1876. "Thebes and its Five Greater Temples." Illustrated with forty large permanent photographs by the author, and descriptive text. 4to. 88 pp., and two plans of modern Thebes. S. Low. 63s.

These excellent photographs were secured by Captain Abney when with the Transit of Venus expedition in Egypt in 1874. In the preface he writes: "Our stay (at Thebes) was of comparatively long duration, and in intervals of leisure excursions were made to the different places of interest by which we were surrounded. The camera was a never-failing source of amusement to all, and the sun pictures obtained in a climate which at that season of the year was very oppressive, wiled away many an hour which might have been less profitably spent."

Everything which Captain Abney has written is the result of his own practical work, executed scientifically, and is therefore reliable and true. His books are not, perhaps, the best for beginners, but as soon as the elementary stage is passed and the raw hand develops into the earnest student, wanting to know the why and wherefore of every process, he will be pleased to have recourse to books which are, as far as our knowledge goes, thoroughly complete and satisfactory.

All Captain Abney's books are in print.

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[From our Special Correspondent.]

### ENGLISH NOTES.

It is with real pleasure that I accept the invitation of the Editors of the BULLETIN to contribute to its pages, from time to time, some account of the progress of photography in Great Britain. To begin with, let me acknowledge at once that we have nothing in the way of periodical photographic literature exactly to compare with the BULLETIN itself. Its appearance is so pleasant that it is satisfactory to find that its contents are as good as its exterior and its illustrations. It has been admired and praised by every English photographer when I have shown it.

Our English weekly periodicals devoted to photography are few in number, but enjoy a correspondingly large circulation. The *Photographic News*, edited by Mr. Bolas, is the oldest weekly, having first appeared on September 10th, 1858. Its former editors—first, the well-known chemist, Mr. W. Crookes, and afterwards those genial photographers, Wharton Simpson and Baden Pritchard—established for it the credit, which it well maintains, of giving full and reliable information on matters photographic, and this in the most pleasant and gentlemanly way. The *British Journal of Photography* is a powerful rival of the *News*. Originally published (from 1854 to 1858) as the *Liverpool*, or *Liverpool and Manchester Photographic Journal*, it adopted its present title and blossomed



into a weekly in 1859. Among its former editors the names of Crookes, George Shadbolt, T. Malone and George Dawson are well known; but to its veteran chief, Mr. J. Traill Taylor, with his able coadjutor, T. Bolton, is due most of the credit of having raised the *B. J. P.* to its present high position. Our third weekly, the *Amateur Photographer*, made its first appearance in October, 1884, under the editorship of Mr. J. Harris Stone; as its name implies it is intended to cater specially for those who pursue photography as a recreation only. The price of the *News* and the *Journal* is three-pence, of the *A. P.* two-pence weekly.

The only other British periodical exclusively devoted to photography is the *Photographic Journal*, or *Journal and Transactions of the Photographic Society of Great Britain*, which dates back to 1853, and now appears monthly during the session of the society, from November to June each year. Perhaps I ought also to mention a little monthly, the *Photographer*, price three-pence, issued by the firm of Mason & Co., of Glasgow.

Our Annuals are two in number, the Year Book, which is connected with the Photographic News, and the British Journal Almanac. These two bulky volumes are sold at a shilling each, the profits being mainly derived from the advertisements which they contain, and are simply indispensable to every photographer, as giving a view of the progress made during the past year, with suggestions for the future.

Next to the press it is to the Photographic Societies existing in any country that we must look for an indication of the state of our science. In addition to the parent society, the Photographic Society of Great Britain, which ought to represent the British Isles generally, we have forty-two societies devoted to photography in England, seven in Scotland, and one in Ireland; a list of which we may be proud, and to which additions are being made almost monthly. Eighteen of these societies are restricted to amateurs only. The annual subscription varies from five shillings to one guinea, in addition to which there is usually an entrance fee. From a rough calculation, I estimate the members of these fifty societies as not less than six thousand in number.

Of professional photographers, the census of 1881 enumerated 7,614. Now thirty years previously the number was exactly fifty-one. From this we see that photography as a profession is of the most recent origin.

Lastly we have the "unattached" amateurs, scattered over the country, who do not belong to any society, usually for the reason that no society exists in their district. The number of such isolated units is certainly large, and they are in part catered for by the Postal Photographic Society, whose albums and note-books circulate from member to member all over the country.

From these statements it is clear that the photographers of the British Isles are a numerous and important body, whose varied interests require careful consideration. It is much to be regretted that the recent proposal of that energetic amateur, Mr. A. Pringle, to constitute an annual assembly or convention of all photographers, amateur and professional, for joint pleasure and instruction, and for the consideration of all matters relating to photography, should have fallen through for want of adequate support. But that such a congress will eventually be established, I feel little or no doubt.

Your Eastman films bid fair to have a "big boom" over here in the coming season. For the three smallest sizes,  $\frac{1}{4}$ ,  $5 \times 4$ , and  $\frac{1}{2}$  plate, I certainly prefer glass plates; but for anything beyond whole-plate size, the films combined with a

roll holder offer beyond doubt, a great advantage. And yet I must confess that I don't like the limp, dull-looking, and awkward-to-handle paper negative. The task of oiling them to render them rapid printers is not exactly a pleasant one, and unless carefully stored they need reoiling at frequent intervals. I would suggest to the Eastman Company, that they bring out a "book" of paraffined paper in which to keep film negatives, so as to prevent the oil from evaporating.

But the sun is shining bright—for the first time this six months I verily believe—and I must be off to rub the winter's dust off my camera. So no more at present from

TALBOT ARCHER.

[From our Special Correspondent.]

## PHOTOGRAPHIC NEWS FROM GERMANY AND AUSTRIA.

(Continued.)

AFTER these experiments photography by gaslight is a fact, which I announced in my last letter, and about which the following is published by Professor Vogel:

"According to the strength of the gas-burners they contain so much more blue light, and their isochromatic effect differs accordingly. By using a Siemens' burner of 120 candle-power the effect of red oxide of lead and cobalt-blue is the same. But if ordinary gas-burners, with chimneys, of 20 candle-power each, are taken, the red oxide of lead will act stronger than the cobalt-blue, the weak burners containing more red light. Therefore, if strong burners are to be applied, a yellow glass is required. This can be prepared by flowing a plate glass with collodion which contains  $1\frac{3}{4}$  per cent. cotton and 0.2 per cent. aurantia.

"It is evident that in a single burner, standing sideways, the difference in the distance of both sides of the picture from the light can be observed easily, and in consequence of which, also the clearness.

"In this way, by taking a view with a Siemens' burner, the picture line next edge *b* was distant from the burner 49 c.m., while the distance of *a* was 61 c.m. Calculating by the square of the distance, *b* would then be about one and a half times as clear as *a*. (Fig. 1.) The two sides will therefore expose unevenly. To equalize this I placed a silver mirror to the left of the original. It illuminated, of course, the nearest side more than the more distant one about 2.4 times stronger.

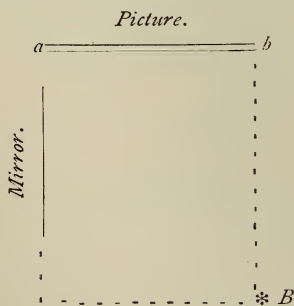


Fig. 1.

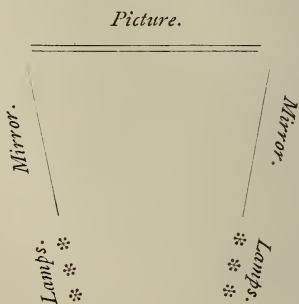


Fig. 2.

If the illumination coming directly from the lamp *B* at *b* is considered = 1, then the direct one at *a* is =  $\frac{2}{3}$ , the illumination of the reflected light at *a*,  $\frac{1}{3}$  and at *b* less than  $\frac{1}{4}$ .

The illumination is accordingly then at *a* in sum total 1, at *b* in sum total  $1\frac{1}{2}$ , therefore much nearer to equal proportion. If the mirror is placed slantingly, so that its free edge approaches the lamp, the illumination can be nearly equalized, the reflecting light becoming stronger at *a*, and sinking at *b*.

But a little routine and calculation is required for this, while for ordinary work it is easy enough to place three flames to the right and three to the left at equal distance from the picture, when the reflected mirror-light can also be used.

Fig. 2 gives a sketch of this arrangement.

The method with more yellow-red colored single burners (in our case six in number) divided in even proportions at both ends. Here, by increasing the size of the picture, the burners may not only be placed alongside, but also arranged in a way that pillar lamps (lampen-saulen) could be applied to advantage as with the wings on a stage.

This method with single burners has the advantage that it requires no yellow glass, and causes very little expense, and such single burners can be very evenly divided.

At the meeting of the Society for the Advancement of Photography, February 20th, Dr. Vogel exhibited two negatives taken from the same colored picture, one by daylight, with a yellow screen, in four minutes, the other taken with six gas burners, as in Fig. 2, in eight minutes. The latter was more intense in the red and yellow parts than the first.

HELIOS, *Dresden*.

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#### OUR PICTURE GALLERY.

THE usual large number of interesting contributions to our gallery have accumulated, and with them many interesting letters, telling of the circumstances of their production.

J. E. Rote, of Lancaster, Pa., sends a couple of cabinets made upon Stanley plates that leave nothing to be desired in the matter of good portraiture. The child's picture is excellent; the details are very good indeed, especially the lace-work of the collar. The lady's portrait is also fine, but would show to better advantage if the printing had been darker; nevertheless, it is of more than average excellence.

H. Butler, of Vermillion, Dakota Territory, contributes a 5 x 8 view taken by moonlight at nine o'clock at night, and with the thermometer fifteen degrees below zero. The subject is a red brick school-house, with the moonlight upon one side, together with a number of other cottages and many trees, the ground being covered with deep snow. The exposure was one hour and a quarter, and the amount of detail is very surprising, the sashes in the windows being quite distinct. The picture looks very much as if it was taken on a dark day rather than moonlight, the details are so good.

From Deane, the well-known photographer of Houston and Waco, Texas, we have received a number of cabinets that are gems of portrait photography. Three of them, pictures of children, are as fine as anything we have seen. Several heads of ladies are excellent pieces of portraiture, but a little overdone in the retouching. The posing in these latter is very happily done, and the lighting uncommonly well managed. The gentlemen's heads are certainly the best of this admirable collection. The older head is very fine, and the gentleman with



heavy goatee and mustache is the best picture of the set. In these latter more care has been taken with the retouching, and the result is apparent to every one who sees them; while their soft and natural lighting makes them most admirable pieces of photographic art.

C. A. Van De Walker, of Pamela Four Corners, New York, sends us an excellent picture of the soldiers' monument at that place. It is a white bronze obelisk surmounted by a bronze statue of a soldier at parade rest. The negative was taken upon a Stanley plate, and for details in the inscriptions and sharpness of outline in the whole picture, is unusually good.

From William Boulton, of Michigan, we have a couple of views of winter scenes there. One is a very good view on a long street with snow on the ground, and the distance as well as the foreground are both excellent. The print is somewhat flat from under-printing. The other picture is a view in the forest with the ground covered with snow, and a group of men and horses are "skidding pine logs." This picture is excellent, sharp, clean and altogether life-like.

J. B. Heyl, of Bermuda, contributes a charming stereoscopic view of a donkey coaching party. This is a group of donkey dog-carts filled with children, and exhibits a very merry scene. The whole picture is very life-like and well caught.

A. W. Neihart, of Nebraska, sends us his first attempt at instantaneous work. Although not as good as we should expect to get, we think the result is encouraging. The fault is probably in the negative, which, if we mistake not, is quite thin. A longer development in a strong developer, with bromide, will make such negatives more dense if time is given them in this developer.

W. A. Bentley, of Vermont, has been studying snow crystals, and sends us a number of pictures of their beautiful forms. It is impossible to tell in words the fantastic beauty of these objects, and we would recommend them to our amateur friends as fine subjects for winter work with their cameras. The frost upon the window-pane; the snow-flake upon the branch of a tree, and the hoar-frost upon the board fence, are all beautifully caught by Mr. Bentley, and form most interesting pictures.

From S. R. Stoddard, at Glens Falls, we have a unique example of a composite picture. It is entitled "The Owl, Owld Story," and represents two owls perched side by side upon the branch of a tree, the faces being of a lady and gentleman, very ingeniously replacing those of these well-known birds. Mr. Owl is endeavoring to make himself agreeable to his lady companion by telling a most interesting story. She is listening with evident attention, but with a look as if she had heard it all before. A wee little owl is hanging on to the branch just between the couple, and is armed with a bow and arrows. The idea of the whole picture is evident from its composition, and is uncommonly well carried out.

D. K. Prescott, of Duryea's studio, Brooklyn, recently sent us some fine specimens of his cabinet work. A picture of two young girls, entitled "Sunshine and Shadow," was very artistic, and has been much admired, the posing and lighting being excellent. A portrait of a baby in long dress is also excellent, and a picture of an old gentleman is one of the best we have seen.

Dr. Geo. L. Sinclair, of Halifax, N. S., contributes a number of gems of scenery that are very good. Melville Island Military Prison is a good, sharp, clean picture, although not very picturesque. "After the Storm," a snow scene,

is very good, and the mounting in oval form makes an uncommonly pretty picture. Whycocomagh River, Cape Breton, is a beautiful view, with some excellent reflections in the foreground, and soft, fading hills in the distance. But the best of the series is entitled "Discharging for Repairs." This is a view of a rocky shore, with a wharf in the middle distance, at which a large square-rigged ship is lying. The effect of the curving shore, the shadows of the masts and rigging of the vessel, together with the town in the distance, go to make up an uncommonly pretty picture.

J. Hall, of Brooklyn, sends us two large pictures of tobogganers. Each of these consists of two young ladies upon the well-known toboggan, and the effect, in addition to being unique, is uncommonly artistic.

Arthur G. Massey, of Market street, Philadelphia, has sent us some of his wonderful pictures of the great fire in Arch street of that city. These were taken between one and five o'clock in the morning, and are the most remarkable pictures of the kind we have ever seen. They are speaking examples of the progress of modern dry plate photography.

Bestwick, of Sixth avenue, New York, contributes some fine examples of his work upon the Stanley plates. These pictures are remarkable for the fine effects of lighting, which give high relief to the subject; and those upon the dark backgrounds are exceedingly artistic. The beauty of the detail in the dresses of the ladies is very remarkable.

J. E. Van Court, of California, sends us several views of the late eclipse of the sun, which are interesting. He used "a cabinet portrait instrument with  $\frac{1}{2}$ -inch stop, and exposed one-half, two and four seconds."

F. J. Richardson, of Bermuda, sends us a number of large views of this vicinity. "The After-deck of H. M. S. Northampton" is an excellent  $8 \times 10$  picture of a large English steamer lying at the wharf. It is very clear and sharp, and thoroughly well done. "A Field of Lilies" is also quite good, but apparently disturbed a little by a breeze, if we may judge from the indistinctness of the flowers. An interesting  $8 \times 10$  print of a "Rubber Tree" is curious, and beautifully taken, every mark upon the limbs of the tree being remarkably sharply defined. Another  $8 \times 10$  view, entitled "Causeway," is good and very clear. A  $10 \times 12$  view of the City of Hamilton is also excellent as a photograph, and interesting in showing the white roofs of the houses necessary in that climate. Another  $10 \times 12$  view is of a large ship upon a dry dock, with the men, like bees, working around her. Altogether this is a fine collection of pictures, and they show an uncommon skill in the photographic art.

W. H. Rau & Co., of Philadelphia, contribute some uncommonly fine views of ice and snow scenery in Watkins and Havana Glens. The weird forms of the snow and ice are finely caught, and from these beautiful pictures we hardly know which is the more charming aspect, the winter or summer dress of these interesting waterfalls in New York State. These ice pictures are among the best views of this character we have ever seen; the details in the shadows of the rocks, as well as the more brilliantly lighted icicles, being equally well caught.

From A. M. Harris, of Harris, Kittle & Co., of Detroit, we have received a number of fine examples of photo-enameling. There is no doubt that this method of finishing a photograph gives a sharpness to the picture and brings out more detail than any method of burnishing. The examples we have before us are excellent in every respect, and have been much admired.

## A CONTRIBUTION TOWARD PRECISION IN CALCULATION OF EXPOSURES.

[Read before the Philadelphia Amateur Photographic Club.]

A RECENT writer says: "The time of exposure must often be guessed at in the vaguest manner;" and again, "then in our uncertainty about strength of light and stops, if this view of the subject be general, it is not surprising that the guessing should be so often wide of the mark."

Although I will not assert that absolute precision is attainable until we have a perfect actinometer (which we shall soon have), I will say that with care and calculation a degree of accuracy and certainty is possible of which many have not dreamt.

The most important conditions are six in number, viz. : Diaphragm, light, time of day, time of year, plate, subject. Diaphragm.—The rapidity of a lens is governed by its aperture and focus. As the intensity of the light from any lamp or window is four times as great at one foot as it is at two feet, so the intensity or brilliancy of an image on the focusing screen is four times as great at six inches as it is at twelve inches from the lens, the aperture of the lens being the same. And as the area of a circle of two inches diameter is four times that of one one inch in diameter, so a lens of six inch focus and of one inch aperture will have the same intensity, and consequently require the same exposure, as a lens of twelve inch focus and two inch aperture. It is simply a question of the relation the aperture bears to the focus, and is easily determined with the utmost exactitude. But if any one thinks that two and two makes five, let him think so, and go on guessing. If the actinic value of light could be as easily determined as the diaphragm, there would then be only one important condition left for the exercise of judgment, viz. : The subject.

But since we have, as yet, no instrument from which we can read at a glance the actinic value of light, we shall have to get at it in a somewhat round-about way by estimating the apparent brightness of the light, and then at its photographic value by a consideration of the time of day and time of year. Until we have the perfect actinometer, which shall give us the measurement of light in degrees as a thermometer measures temperature, it will be convenient to describe the light on the subject as very bright (sun or cloud), bright (sun or cloud), bright haze, overcast, dull and very dull. Now let each of these conditions of light be measured by an ordinary actinometer (which every one had best do for himself) and their relative values noted for future reference. Time of day.—You are aware that within two hours of sunrise and sunset the photographic value of light is often very different from its apparent brightness; that, in fact, the light is very yellow near sunrise and sunset. A very good clew may be obtained by a consideration of the time of day. Some use a table showing the allowance to be made for each hour of the day and for every month in the year. This answers very well, but it is a little complicated. A simpler and more scientific method is to measure the altitude of the sun. This can be done with sufficient accuracy with a common tape measure held at arm's length. Then measure with a common actinometer the actinism of the sun and diffused light at various altitudes from the horizon. Taking bright midday sun as 1, we will find the sun at twenty-eight degrees above the horizon is relatively  $1\frac{1}{2}$ , at seventeen degrees 2, at thirteen degrees 4, at ten degrees 6, at seven degrees 12, and so on. This will give value for both time of day and time of year at once, but the sun may be obscured by cloud or



the horizon may not be visible. Another method which suggests itself, and which works well in practice, is to make a table showing the hour of sunset for each month in the year, and another showing the relative light value at, say, two hours from sunrise and sunset, ninety minutes, sixty minutes, forty-five minutes, thirty minutes, fifteen and ten minutes, as compared with midday in midsummer.

The rapidity of plates must be measured, either by the plate-maker or operator, with a sensitometer.

The subject will give plenty of scope for the exercise of judgment. Subjects should be classified, and experiences (both successes and failures) will, if noted, give valuable data to assist the judgment.

We have decided on the view to be photographed; the exact spot which will give us the best foreground; planted the camera; selected the lens which will give the desired angle of view we wish; focused; decided on the stop to be used; inserted the plate-holder; but before we draw the slide let us calculate the exposure carefully on scientific lines and thus save any quantity of plates spoiled by incorrect timing and oceans of time consumed in timid development.

As a basis for all our calculations, we will suppose that we have ascertained that the correct exposure is one second for a normal subject, which will be a landscape with light foliage in the foreground, with a plate sensitometer number 20 and diaphragm value  $f/22$ , full sunlight. This is the standard to calculate from.

*Example 1.*—Subject, open view with heavy masses of foliage in foreground—double the standard, or two seconds.

Stop,  $f/30$ —double the standard—4 seconds.

Plate, sensitometer number 16—four times standard—16 seconds.

Time of day, 3 P.M., October—four times standard—32 seconds.

Light—full sun, patches white cloud—no allowance; correct exposure, 32 seconds.

*Example 2.*—Subject, sea and sky— $\frac{1}{5}$  standard— $\frac{1}{5}$  second.

Stop,  $f/16$ — $\frac{1}{2}$  standard— $\frac{1}{10}$  second.

Plate, sensitometer 24— $\frac{1}{4}$  standard— $\frac{1}{40}$  second.

Time of day, 2 P.M., April—normal.

Light—light sunshine, hazy sky— $\frac{1}{2}$  standard— $\frac{1}{20}$  second; correct exposure,  $\frac{1}{20}$  second.

Where the angle of lighting is unusual or extreme, allowance has to be made; for instance, if the lighting is very much from the side the exposure should be the same as for diffused light, as the golden rule is to expose for the shadows and let the lights take care of themselves; this rule has exceptions, of course, but where the shadows are broad, they must have plenty of detail always.

It will frequently be found at midsummer, especially in photographing perpendicular objects in sunshine, that less exposure is required an hour or two before and after midday than at midday, not because the sun is more powerful, but because the angle of reflection is more favorable. It is generally necessary to give more exposure with sunshine and a clear blue sky than with the sun shining between patches of white sky, as the shadows are then better illuminated and contrasts less violent.

## THE OXY-HYDROGEN LANTERN.

BY FRANK BEMENT.

[Read before the Photographic Society of Philadelphia.]

THE first form of optical lantern, known as the "Magic Lantern," was invented by Athanasius Kircher. He used simply two double convex lenses, placing the picture between them, and having an adjustment for focusing on the front lens. The illumination was obtained from an ordinary oil lamp with a concave reflector behind it.

In the year 1824, Drummond discovered the lime-ball light, which was introduced into the solar microscope soon afterward. The solar microscope was formerly illuminated by the parallel rays of the sun, reflected through the lenses by a plane mirror. This instrument was fastened to a partition placed in the window, so arranged that the mirror could be swung in any direction to suit the constantly changing direction of the sun's rays, and the whole apparatus operated from inside the room. There was much trouble experienced by those using the solar microscope, on account of the uncertainty of the weather and the necessity of operating in the daytime only.

After the Drummond light came into use, all these troubles were overcome.

The optical lantern is the outgrowth of the gas microscope, and there is no end to the number of forms which have been constructed. While I do not propose to discuss any of the old forms, still I cannot overlook what, to me, is the best type. I have examined several of the English and French lanterns, and have failed to see any which are equal to those manufactured in this country.

The form of body which I prefer, consists of a wooden box of some well-seasoned wood, lined with sheet iron or tin. It is highly necessary that the metallic lining should be separated from the wood, leaving an air space so that there will be a circulation of fresh air constantly rising between them. I lay great stress on the air space, because I do not believe that any better non-conductor of heat for lantern purposes exists. Asbestos has been used as a non-conductor with more or less success, but I do not like it, except when placed between the upper and lower parts of a dissolving lantern. It is good in this case, because the heat, which always rises, would affect the upper lantern and probably crack the wood, and even in this place it must be at least one inch thick to be of any service.

As I am only taking up the gas lantern, I will not go into any of the various sources of light except the gas jet. The easiest and safest jet is the oxy-calcium. It consists of a large alcohol flame, the combustion of which is greatly supported and intensified by burning oxygen gas with it. The alcohol flame is blown on a piece of lime by the force of the gas, which passes through a blowpipe. The jet gives a fair light, in comparison about twice as bright as a good oil lamp. The next kind of jet is known as the oxy-hydro-calcium. This form uses both oxygen and hydrogen, but they do not mix until they reach the lime. The hydrogen gas takes the place of the alcohol in the oxy-calcium jet. There are two forms of the oxy-hydro-calcium jet. In one the hydrogen is in a large flame rising from a Bunsen burner, and is driven on the lime by the oxygen which comes from the blowpipe. The two gases mix only at the point of ignition. This is known as the blow-over jet. The other form is what is known as the concentric jet. This one has apparently only one tube for the gases to pass through

to the lime, but on closer examination it will be found that there are two tubes, one inside the other—the outer one conveying the hydrogen, and a small inner tube through which the oxygen passes. Either of these jets give a good light up to an eighteen feet circle.

The present mixed, or oxy-hydrogen, jet, developed from the old concentric jet, which was brought about by experimenting with shorter oxygen tubes, small portions of which were cut off at a time until the whole tube was removed; it being observed all the while, that the more the gases were mixed, the more intense the light became; and after this fact was established the mixing chamber was added.

The mixed jet should be used with both gases under about an equal pressure. The reason for this is that if one gas had but a very slight pressure, the other gas might force it back, and the result would be a disagreeable snap and a disappearance of all light.

There are various forms of condensing lenses, two of the simplest of which I will try to explain. The first is the ordinary combination of two plano-convex lenses, giving about a three-inch focus. As the condensing lens is for the purpose of collecting the rays of light, it will be well to say something regarding its action. A convex lens acts exactly like a prism. The rays striking it are refracted toward its axis, and every ray falling on it is refracted more or less in proportion to the angle at which it strikes it. It is for this reason that I have always contended that the oil light will not give as good definition as the jet.

As light decreases as the square of the distance, it is sometimes desirable to have a condensing lens with a very short focus, so that the jet will be close to it. In this way a large quantity of divergent rays are collected and thrown on the picture, making the whole illumination much more intense. One of the great advantages of the triple condenser to the ordinary optical lantern is its adaptability to objectives of different foci. With it any objective can be used which has not less than four inches or more than ten inches focus, and if very long focus objectives are used, the middle lens can be removed, making an ordinary double condensing lens. The diameter of a condensing lens should be large enough to cover the three-inch square opening which is generally used. Some operators prefer the five-inch lens, while many claim that it is an unnecessary expense, and use the four and one-half inch lens. There may be some advantage derived from the five-inch lens, but it is trifling when only used for projecting lantern slides.

The subject of objectives is too lengthy to go into. A good objective should be perfectly rectilinear, and cut sharp all over the field; these two qualities are seldom obtained. The question is often asked: "Can I place my lantern back of the audience?" This can be done in any reasonable proportioned room or hall. The image increases in proportion to the distance, *i.e.*, if your lantern gives an eight feet picture at twenty feet from the screen, it will give a sixteen feet picture at forty feet, and a twenty-four feet picture at sixty feet. If the ceiling is not high enough, an objective of longer focus must be used, so that the image will not be too large. The objectives used in our Academy of Music are what are known as "four-four, or whole plate tubes," which have about a ten and a half or eleven inch focus.

The first thing to be considered in operating the lantern is to see that all the lenses are perfectly clean. You next turn your attention to the lime; this is the



most troublesome and annoying part of running a gas lantern. One can never buy limes twice alike, they are almost always too soft. But supposing that a good hard and round piece has been selected, it should be placed in the cup or holder and revolved to see that it clears the nipple of the jet all around, or, in other words, "runs true." It is best to blow through the jet to see that the tubes are free and contain no dirt; after this is ascertained, attach the rubber tubes to the cylinders or gas bags. Turn on slowly the hydrogen gas and heat the lime through, then turn on slowly the oxygen until the hydrogen is nearly all taken up, then increase both hydrogen and oxygen until the best light is obtained. This point is reached just before the jet commences to blow. After the jet is working properly, place a slide in the carrier and get the focus; then remove both slide and carrier, leaving a plain disk of light on the screen. Now the jet must be adjusted so that the circle will be evenly lighted throughout, after which screw all movable parts fast, and the apparatus is ready for exhibiting.

In operating a dissolving lantern, the same operation is gone through with in both lanterns, the extra attachment being a dissolving key. In setting up a double lantern, one should be very careful that both of the disks exactly match each other, so that when dissolving, one picture will occupy the same space that the previous one did.

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#### \$150 IN PRIZES.

Our publishers have determined to offer the above sum in prizes for competition at the St. Louis meeting of the Photographers' Association, *for pictures made from negatives taken since the Buffalo Convention in 1885*. The other conditions are as follows:

The above sum will be given as prizes for the best display at the coming Convention of the P. A. of A., to be held at St. Louis in June next, for the following pictures, which are to be made with Dallmeyer's Lenses on Stanley Dry Plates, printed on N. P. A. Albumen Paper.

\$50 for the best 18 x 22 portrait.

\$50 " " " six 8 x 10 views.

\$50 " " " twelve cabinet photos.

The successful pictures, and negatives from which they were printed, to become the property of E. & H. T. Anthony & Co.

Merit to be determined by three judges, who will be appointed at time of meeting.

Pictures to be marked: "Competition for the Anthony Prize."

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PLEASE send me the BULLETIN, with illustrations, for the coming year. I thought I could not afford to take it this year, but I find that I cannot afford to be without it.

CHAS. G. HULL.

PLEASE send me your BULLETIN for 1886. I think it is grand, and the price certainly within the reach of all.

W. B. VANDERVALL.

## OUR ILLUSTRATION.

SOME time ago Mr. A. C. McIntyre sent us some of his beautiful views of the Thousand Islands and vicinity. There were a number of large prints (mostly 10 x 12), and they called forth so much admiration from those who saw them, that we at once determined to make a mosaic of the collection and present it to our readers as a BULLETIN illustration. The beauty of the original pictures is truly marvelous, and is thoroughly well preserved in the reduced copies we present with this issue of the journal. Mr. McIntyre is to be congratulated upon fine artistic taste in the choice of the views, and also upon the skill displayed in the production of such highly-finished pictures. These views should serve as studies for those of our readers who practice landscape photography, for it is seldom that such fine scenes are so well caught by the camera, and there are few places in America that surpass this popular resort upon the St. Lawrence for exquisite scenery.

The fine results speak more than words for the Stanley plates, upon which the negatives were taken with a Platyscope lens. For a moderate-priced instrument this latter shows some most remarkable work.

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 DR. HIGGINS' PICTURES.

DEAR SIRs,—I had intended writing before this (but have been prevented) to congratulate you on the very fine illustration in the BULLETIN of March 13th. The one that I have received of the Myndert Starin is really the best piece of instantaneous work that I have seen at all—everything is so very sharp and clear, both of the boat itself and also of the distance; of Blackwell's Island and the opposite shore—the contrasts of light and shadow are so strong and well defined. Besides being beautiful to look at, the letter of Dr. Higgins is very interesting and instructive, as explaining his development of the plates with ferrous oxalate instead of pyro and soda or potash, which every one has thought necessary heretofore, also giving all the data in regard to lens, stop, shutter, plate and hour of exposure, so that no one can fail to learn something from it.

Very truly yours,

March 29, 1886.

C. S. BRADFORD.

[Dr. Higgins has received scores of similar letters congratulating him on his beautiful work as shown by the specimens in the BULLETIN.—EDITORS.]

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HAPPY THOUGHT.—Why not make a detective camera to look like a poodle dog, for the use of ladies in catching the latest style of dress as exhibited on the backs of their sisters. It would certainly be much safer than the present method in vogue among ladies, of walking one way and looking the other while they try to calculate the number of yards necessary to get up the latest wrinkle in polonaises or what-do-you-call-ems, as worn by some one perhaps half a block away. Pull the dog's tail and release the shutter.

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SCENE IN OUR PUBLISHER'S STORE—Lady (much enraged at the stupidity of clerks in general and photographic clerks in particular): "I don't see why you cannot fill orders correctly. Here I have come all the way from C——— to exchange this lens. I ordered a  $6\frac{1}{2} \times 8\frac{1}{2}$  and you have sent me an  $8\frac{1}{2} \times 6\frac{1}{2}$ ." Fact.





corner of the frame? Well, that was the means of proving a plea of 'self-defense' and acquitting an innocent man of a charge of assault. You see one man is in the act of striking another who seems unconscious of his danger. That picture proved conclusively which was the assailant. I happened to be on hand with my little 'detector' and caught him in the act.

"Notice that one in the center; the one of the maiden in her bathing suit. She looked very sweet and natty when she went in, but with her suit dripping with the salt water she presents anything but an attractive appearance. Her *quondam* lover made that picture and in an evil moment showed it to some friends. She heard of it, and now they 'never speak as they pass by.' Two hearts that beat as one (past tense) now throb on their own separate hooks. Fun! Why, my dear boy, there's no end of it. Come to the window a moment and I guarantee that in five minutes we can make as many good pictures of street life."

We went to the window and a moment later an old apple-woman appeared upon the scene and, resting her basket on the walk, entered into animated conversation with a lady "frind." Engrossed in her story of the death of her "buck billy-goat," she did not notice the urchin who stole up from behind and stealthily helped himself to a hat-full of the suspiciously bright apples in her basket. But the little camera was more alert, and now there stands indisputable evidence of the youngster's depravity. I had seen enough. I caught the disease.

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## POSTAL PHOTOGRAPHIC CLUB.

### RULES.

1. The affairs of the club shall be managed by a committee of seven (7) persons (including the officers), to be elected annually by ballots of the members sent by mail to the Secretary in the month of March of each year. The decision of this committee shall be final in all matters connected with the club.

2. The officers shall consist of a President and a Secretary, who shall also act as Treasurer. Both to retire annually, but to be eligible for re-election.

3. The President shall preside at the meetings of the committee, and exercise a general supervision over the interests of the club. The Secretary shall conduct the correspondence, arrange and send out the albums, and furnish an account of the receipts and expenditures of the club at least once in every twelve months.

4. Any person practicing photography, as an amateur, may, upon the recommendation of a member of the club, become a member (active or associate), on payment of entrance fee and subscription.

5. Active members shall pay an entrance fee of 50c. and an annual subscription of \$2, or half-yearly, \$1.25, in advance.

6. Associate members shall pay an entrance fee of \$1 and annual subscription of \$3, and shall receive the albums and note-books in their turn, but shall not be required to send in prints for the benefit of the club.

7. All dues shall be payable April 1st, but any member entering after October 1st shall be allowed to pay the half-yearly subscription up to April 1st, following.

8. Any member not sending the amount of the dues to the Secretary within four weeks from April 1st (or of election, if a new member) shall be considered as having withdrawn from the club.

9. Any surplus funds shall be used, as the committee think best, for the advancement of the club.

10. Each active member shall send to the Secretary, for the benefit of the Club, an annual *average* of one (1) print per month (and as many as possible in excess of that number), from negatives exposed and developed by him, together with particulars of the kind of plate used, lens, exposure, name or locality of subject, and any other interesting information, entered on slips provided for the purpose.

11. The prints contributed must be work of the member sending them, and may be made by the silver, platinotype, carbon, permanent bromide, or any other process, except cyanotype. They must not be larger than  $6\frac{1}{2} \times 8\frac{1}{2}$  inches, and must be sent unmounted to the Secretary, suitably protected in a package, indorsed with the name of the sender, and prepaid.

12. The use, by a member, of negatives not entirely his own work, or of views not printed and toned exclusively by amateur hands, shall render him liable to a forfeiture of membership, at the discretion of the committee.

13. The prints sent to the Secretary shall be circulated among the members in albums, together with note-books for criticisms on the photographs circulated, queries and hints, or useful information on photographic subjects.

14. The prints in the album shall be numbered for reference, the name of the senders being also given, unless they signify to the Secretary that they do not wish their names to appear.

15. Subject to the judgment of the Secretary, a certain number of prints may be published in each album as "Guess Prints," the name of the author not being given; this for the purpose of preventing the members falling into mannerisms.

16. The name of any member who, for the space of two (2) consecutive months, fails to supply his quota of prints, may (after timely notice and at the discretion of the Secretary) be omitted from route lists of subsequent albums until the regulation be complied with.

17. A fine of twenty-five (25) cents per day shall be levied upon the members keeping the album or note-book beyond three full days (Sunday not included). Upon the return of the album after its rounds, notice will be sent by the Secretary of the amount due, which must be paid under the same penalty as in Rule 16.

18. The albums shall be forwarded promptly by each member, express prepaid, to the next name upon the route list in note-book; and notification (by postal card) must be sent at once to the Secretary of the date of receipt and forwarding.

19. No member shall in any way mark or deface an album, and should he receive it, or the accompanying note-book, in a damaged condition, or fail to receive them in due time, he shall immediately notify the Secretary to that effect.

20. After the return of an album and note-book from the first round in the club, they shall be detained by the Secretary until the next current number is in readiness. In same package with the new issue, they shall then be sent out upon their second round, that the members may see the criticisms and notes. After having been thus twice circulated, in accordance with the above rules, they shall be returned to the Secretary, who is held responsible for their safe keeping while in his charge.

21. Each member shall enter in the note-book, opposite his signature, upon a page prepared for that purpose, the numbers of the photographs which, in the album under consideration, he deems first and second best in both technical and artistic merit. At the end of each year, special albums containing such prize prints shall be prepared by the Secretary; and, with suitable inscriptions, presented to the two members who, as voted above, have shown most marked excellence in photographic work during the year.

22. It shall be the special duty of every member of this club to secure good negatives

of all subjects of historic interest, building or landscape, in his vicinity. These prints, after appearing in the regular issues of the albums, shall, at the end of the year, be gathered together by the Secretary into a well-bound Historical Album, with ample descriptive note-book, for the use of the members.

For further information, address the Secretary,

E. L. FRENCH,  
Aurora, Cayuga Lake, N. Y.

#### PROGRAM.

1886.

The following program of subjects has been adopted by the club for the album of the year:

VI.—January—Water Views: 1, In motion; 2, Reflections.

VII.—February—*Genre* Groups; Animals.

VIII.—March—Winter Scenery.

IX.—April—Interiors; Flowers.

X.—May—Grotesquerie.

XI.—June—Statuary; Architecture; Copies of Pictures.

XII.—July—Instantaneous, other than water: 1, Drop-shutter; 2, Extreme Rapidity.

XIII.—August—Trees; Outdoor Groups.

XIV.—September—Christmas Cards.

XV.—October—Clouds; Water Views; Landscape, with Animals.

XVI.—November—Composition Picture. Subject: 1, The Musician; 2, Solid Comfort.

XVII.—December—Interiors, or Outdoor Views, showing people engaged in various trades or occupations.

XVIII.—December 25th—Special Christmas Number. Portraits (professional) of Club. Prize Pictures of Year.

A strict adherence to the above program is not compulsory upon contributors, good miscellaneous prints being always interspersed through each album, to vary the monotony. Attention is called to these varied subjects, merely that every member may be given practice, for comparison with others, in a continually widening artistic field. They are suggestive, rather than mandatory.

#### PROVIDENCE AMATEUR PHOTOGRAPHIC ASSOCIATION.

THE semi-annual meeting was held at 70 Congdon street, on March 6th, at 7.30 P.M. President MASON in the chair. The minutes of the last meeting were read and approved. The *Treasurer's* report was read and accepted. The Committee on the prize composition picture, subject "Ruin," reported that the

judges gave the first prize to Mr. G. C. Carpenter, and the second to Mr. A. A. Eddy.

Mr. M. L. Goff was elected a member.

The next thing in the order of business was the election of officers for the next half-year, which resulted as follows :

*President*, W. T. BURROW; *Vice-President*, STEPHEN WATERMAN; *Secretary*, ROBERT W. TAFT; *Treasurer*, E. A. BARROWS; *Librarian*, F. L. HINCKLEY.

As Mr. Earle, of the firm of W. H. Walmsley & Co., was present, the meeting dissolved, to hear him speak of the Beck lenses, samples of which he showed. He also showed a sample of the Instantograph Camera. After passing a vote of thanks to Mr. Earle, at a late hour the meeting adjourned.

R. W. TAFT,  
*Secretary.*

## NEW ENGLAND PHOTOGRAPHERS' ASSOCIATION.

THE first regular meeting of the New England Photographers' Association, for the season of 1886-87, was held at the studio of J. W. Black & Co., 333 Washington street, Boston, Monday, March 1st, 8 P.M. Officers for this year are: *President*, W. H. PARTRIDGE, Boston Highlands; *Vice-President*, AUG. STORY, East Boston; *Treasurer*, GEO. W. WHITNEY, Cambridgeport; *Secretary*, ARTHUR A. GLINES, Newton, Mass.

*Executive Committee*: A. F. RUSSELL, Quincy, Mass.; E. J. FOSS, Malden, Mass.; D. T. BURRELL, Brockton, Mass.

A large exhibition of photos was made by Mr. E. F. Ritz, 58 Temple place, Boston.

The stereo camera donated by the Scovill Manufacturing Company, and lenses for same donated by Benj. French & Co., were awarded to E. J. Foss, of Malden, Mass., for improved construction of sky-lights for photographers.

A very large display easel, loaned for exhibiting photos, was purchased by subscription among those present for use at future meetings.

Two new members were proposed.

Voted to adjourn at 9.30.

A special meeting was held at the same place Monday, March 8th.

There was an attendance of about forty to see the demonstration by Mr. David Cooper, of the Eastman Dry Plate Company, on the uses of permanent bromide paper and paper negatives.

Mr. Cooper made two enlargements (about six-inch heads, from a card-size bust of a lady)

in eight seconds and three seconds, the last timed about right, using artificial light from stereopticon.

Some fine prints from C. F. Conly's studio were exhibited, he being the photographer so brutally assaulted and robbed when leaving his place late one evening (about March 11th.)

One new member proposed.

ARTHUR A. GLINES.

*Secretary.*

## THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.

REGULAR MEETING, FEB. 9TH.—*Continued.*

Mr. NEWTON—When you get to the ammonia developer you are environed also. If you go beyond about six drops—the maximum—to an ounce of water with the ammonia developer, and undertake to force a gelatine plate, you are sure to get a green or red fog. With the soda or potash the red or green fog will not happen unless the plate is an old plate, and then it will not be properly a red fog, that is, using it without bromide. The result, however, may depend somewhat on the age of the plates.

Our worthy President here exposed a plate on the electric-light plate-testing machine near the window three or four minutes with a small diaphragm in the lens, and we took it into the dark room and put four ounces of water in a glass, and into that we put three drops of this solution, a solution made of 32 ounces of water—in the 32 ounces of water there were three ounces of carbonate of potash and three ounces of yellow prussiate of potash and three ounces carbonate of soda. Into the four ounces of water we put three drops of this solution. Now that was a weak alkali developer—you will all agree that it was pretty weak. The normal strength of that developer was one dram to every ounce, but instead of being four drams it was only three drops. There were two of those plates exposed, and we made two as beautiful negatives as you ever saw with the weak developer.

*A Member*—How much pyro did you use?

Mr. NEWTON—The same quantity of pyro as should have been used for a normal developer, two grains to the ounce.

That you must use a very, very weak developer for greatly over-exposed plates seems well settled I think, beyond any kind of question, or beyond any peradventure. Therefore, if that be so, it would seem to follow that on an under-exposed picture you must



use a strong developer. I would reason that way. I have two negatives, one was exposed two seconds and the other twenty seconds, just ten times as long as the other, and by using a developer proportioned to those two exposures there was no perceptible difference between the two negatives; there is not any one who could tell which was the longer or which was the shorter exposure—whether the one exposed twenty seconds or whether the one exposed two seconds was the long or short exposure.

MR. FICKENS—About what time did they relatively take to develop; what was the difference in time?

MR. NEWTON—There was not much difference in the time. You can expose a negative, one for six minutes, another for twenty seconds, and another for two seconds, and you can get the same result in the negative by knowing how to develop them. The best way to develop a plate when exposed is to put it first in a solution of pyrogallic acid, and not into an alkaline bath at all. Your picture will all come out reddish in color, caused by the action of the pyrogallic acid. Now, if you gradually put a drop of your alkaline solution into your graduate glass, and pour your developing solution back into it, and then again on the plate, you can make just as good a negative from an over-exposure as from a normal exposure, using a proper amount of bromide, if necessary.

MR. NEWTON—There must be some ratio between the developer and the exposure of the plate. I have tried to develop under-exposed pictures with a weak developer, but I have never succeeded in making a negative that is worth the name of a negative at all.

MR. BEACH—I will state that at our exhibition there was an instantaneous picture that was developed by a weak developer, and it was two hours in developing.

MR. NEWTON—It is barely possible that you could get a good picture after waiting two hours, but I would not talk about a process that required any such time as that. I don't want to spend over ten minutes in obtaining a negative. I don't want a negative that takes over fifteen minutes to develop. (Applause.)

MR. BEACH—Are there any further remarks upon this question? Mr. Fisk, can't you give us a little information in regard to the matter?

MR. FISK—*Mr. President:* I see the members are all getting tired, and I do not believe it would pay to carry on the discussion at this time. I wish simply to make one remark in regard to Mr. Newton's assertions, and in re-

ply I would state this—it is a good deal as the President has just said: "It is the development of an instantaneous picture that we want to get at." If we find that a plate has had two seconds' exposure (which is a normal exposure), it has nothing to do with an instantaneous one. And I agree with Mr. Newton about strengths of developers, and that in all my experiments a strong developer was required. With a quickly-exposed plate you want to have the developer as strong as you can use it without chemically fogging the plate, in order to get all the detail, and then weaken it and add bromide to get your density, if necessary. I have with me here two instantaneously-exposed plates. I don't know that it will pay to pass them around, but it will take but a moment to tell you how they were developed. I used a saturated solution of carbonate of soda, a saturated solution of sulphite of soda, and dry pyrogallic acid. Two ounces of the saturated solution of carbonate of soda were taken, one ounce of water was added, and the plate was soaked five minutes in that solution; then one-half an ounce of the saturated solution of sulphite of soda was added. While these solutions are on the plate, take six to eight grains of dry pyrogallic acid, place them into a graduate, pour the soda off the plate into the graduate to dissolve the pyro, and then pour back on to the plate and finish the development. I do not believe, Mr. President, that it is possible to weaken any developer which is known to-day, and take what we call instantaneous exposures and make properly-timed negatives. It requires a strong developer to bring up development quickly, as Mr. Newton said this evening. This fooling over a negative for two or three hours or half a day is perfect folly. I have negatives that I have taken instantaneously, and I have found that by using a strong alkali developer I could develop one to a good density and detail in fifteen to eighteen minutes; while I left another in a diluted, or weak, solution of the same developer for a whole day, and I could hardly see a trace of development. That I think is proof, in one sense of the word, as to what a strong developer will do. If any here would like to see these negatives, I will pass them around.

MR. ROOSEVELT—In regard to the subject as to which is the best developer to be used, none of the gentlemen have spoken on that subject.

MR. BEACH—We are gradually drawing towards it.

MR. ROOSEVELT—As I have had some ex-

perience in regard to the use of developers, I would like to casually refer to it. In discussing what I had done here, I seem to have given the impression generally that the results that I obtained were failures, whereas, on the other hand, as a general thing I have made successes and surprised myself. I was entirely satisfied with the Seed developer, and supposed I had got through with the study of development; that I could control the plate absolutely; that I could bring out any density or detail I wanted. I had hardly reached that stage of happiness, when, on examining the reports of the minutes of this association, I discovered that the Seed developer was not only absolutely an impossible developer, because it was over-saturated, but that it was highly unscientific, and that the only developer that was worthy of mention was the potash developer. Determined to get at the very best possible formula, I bought the potash developer already put up and prepared, and went to work to use it, but at the same time I still kept my Seed developer in a corner and when the potash developer would not bring out anything, I would throw it aside and return to the Seed developer, but always with a sensation in my conscience that I was a guilty man (Laughter).

After our last meeting, I took a dull interior view, with an exposure of five minutes, and set to work with the potash developer, but with the usual result. I mixed it according to the formula and poured it on the plate and waited. If there was anything visible, it was the haziest and the dimmest and the weakest thing imaginable. So I took the bottle of number two, poured it on the top of the plate and where I poured that, gentlemen, I brought the picture out. Then I worked around the plate,  $6\frac{1}{2}$  by  $8\frac{1}{2}$ , from one corner to the other, and wherever I poured I brought out the picture. As it happened, fortunately, to be an interior view, I got various shadows, lights and shades of beauty, the curtains coming out a beautiful hazy color in one part, a brilliant color in the upper, and a dull and somber hue in the lower end, making a pretty, but eccentric, picture.

Mr. PARSELL—We should thank Mr. Eastman for the present he has given us this evening, and I hope the society will remember that before it adjourns.

Mr. WALKER—I have drawn a resolution that I think is suitable for this occasion.

The resolution is as follows:

*Resolved*, That our thanks be tendered to the Eastman Dry Plate and Film Company for

the beautiful and useful easel which they have so kindly presented to this society. That we accept it as a token of their good wishes for our prosperity and success, a sentiment which all the members of this society heartily reciprocate.

Carried.

The meeting then adjourned.

#### REGULAR MEETING, MARCH 9, 1886.

The meeting was called to order at 8.15 P.M. *President* BEACH in the chair.

He said that the Board of Directors have been looking for new and better quarters for the society, and that they have in contemplation two or three desirable locations.

A circular has been sent to each member of the society, setting forth the manner in which we hope and expect to raise the money, and I earnestly invite your attention thereto.

Mr. Canfield sends me a translation of a circular-letter, addressed to the society by the Photographic Association of Belgium, from Brussels, Belgium, the purport of which is that they intend to get up a Photographic Congress.

The propositions they propose to have settled by this congress are:

*First*.—A unit of light. (Photometry, the most suitable light for actinism.)

*Second*.—Objectives. A unit for focal length; aperture; doing away of attachment of lenses by screws.

*Third*.—Unity in expressing the proportions of photographic preparations.

*Fourth*.—Unity in the dimensions of plates.

*Fifth*.—Unity of nomenclature of photographic processes.

*Sixth*.—Measures to be proposed to the different governments, for passing through the Custom-House photographic plates and preparations sensitive to light.

*Seventh*.—Examination of the question of photographic instruction with a view to uniformity of programme, and the conferring of international "certificates of capacity."

The objects of this proposed Congress are certainly very admirable, and the subjects and suggestions made are worthy of our consideration.

At a meeting of the Board of Directors on February 17th, Messrs. George H. Fox and Daniel P. Read were elected Active Members; James S. Hood, an Associate Member; and Mr. Joseph P. Beach, a Corresponding Member.

At the same meeting, Mr. C. W. Canfield's

resignation as Corresponding Secretary was accepted, and Mr. R. A. C. Smith was elected Corresponding Secretary. I have appointed Mr. Frank G. DuBois and Mr. John T. Granger as a special Auditing Committee to audit the accounts of the Treasurer, to be reported at the annual meeting of April 13th.

Messrs. Anthony & Co. have presented some photographic books to the society.

Mr. Granger will read the letter.

NEW YORK, March 9, 1886.

GENTS,—We herewith send copy (bound) of our BULLETIN for 1885; also "British Journal Almanac," and "Photo News Year Book" for 1886, which we tender with our compliments.

Very respectfully,

E. & H. T. ANTHONY & CO.

*To the Society of Amateur Photographers,*  
1260 Broadway.

A vote of thanks was then passed to Messrs. Anthony & Co.

A shutter was then exhibited by Mr. Beach, who stated that it had been recently patented by Samuel W. Geery, Francis W. Jackson and Charles B. Day.

It was claimed for the shutter that a full exposure was given to all parts of the plate, inasmuch as the opening commenced and closed at the center of the lens.

The shutter was very light and about one-quarter of an inch thick.

Mr. BEACH—I have a letter from Mr. Stillman, of London, addressed to Mr. George H. Ripley, which I will read.

Mr. Stillman says: I send by this mail a roll of negatives taken on Eastman paper. Nos. 1, 2, and 3 were all taken from the same position of the tripod, a few inches from each other, and the others are all variations of a few feet, from the same point, showing what a difference in the composition may be effected by a trifling change in the point of view. They are all views in Ottery Park, South Devonshire. We are all much interested now in paper photography, and I am doing what little I do in paper films. It has a great future, this branch of the trade, but there is no danger of superseding glass entirely.

With kindest regards to all the club, believe me,

Yours truly,

W. J. STILLMAN.

The Secretary then read a portion of a letter received from Mr. F. York, which contains the following remarks:

I find that I must revolutionize our work,

as the wet collodion process lacks the gradations of gelatine.

I am very successful with the work I did in the States. All will be published in five lecture sets—New York City, Canada, Washington City, Washington to the Yellowstone Park, New York to the White Mountains.

Mr. BEACH—Now we will discuss the question of what is the best method of developing an under-exposed plate. I believe the Committee on Dry Plates may have something to say.

Mr. NEWTON—The Committee on Dry Plates have not made any experiments since the last meeting. It was their intention to have done so if an opportunity offered.

Mr. BEACH—I have a word or two to say in regard to a plate that I spoke about at our former meeting, where I stated that a plate that was under-exposed had been two hours in developing, and promised to ascertain for the benefit of the Chairman of the Dry Plate Committee the actual facts in regard to it. The writer says: The negative was started in development with Edwards' normal developer (ammonia and pyro) and on the image refusing to appear, about 16 ounces of water was added, and the dish put aside with an occasional rock to keep the pyro from separating. She was a slow one and was put to a very severe test, being exposed with a 5 x 8 Ross Doublet Lens on a 6½ x 8½ plate, *f*-16 stop, Sand's shutter, ⅛ of a second actual measurement.

The lens pointed almost directly at the sun, with the subject almost entirely in the shadow. The plate was allowed to develop for fully two hours, and came out perfectly illuminated and full of detail, even in the very deepest shadows,

I always begin development with the normal developer, and in case of under-exposure continue to weaken the developer as the image shows up, and reverse the operation in cases of over-exposure.

JOHN E. DUMONT.

Mr. Dumont was the party I referred to, and the particular picture that was shown at our former exhibition was the photograph of some Albany steamers just as they were arriving at Albany early in the morning, and taken on the shadow side.

*(To be continued.)*

I HAVE taken the BULLETIN for quite a number of years and consider it one of the best journals published. I could not get along without it.

L. P. PIERCE, *Photographer.*



## What Our Friends Would Like to Know.

*N.B.*—We cannot undertake to answer communications of a technical character except through the columns of the BULLETIN. Correspondents will please remember.

*Q.*—H. C. writes:—Will you have the kindness to inform me through the BULLETIN what is the formula for making lantern slides by the French albumen process, called Levy pictures, which are spoken of by Professor Laudy in "The Magic Lantern and its Applications," on page 171 of the BULLETIN for March 27th?

*A.*—The formula for making these pictures is a secret, but we believe that it is iodized albumen with aceto-nitrate of silver bath, the development being with gallic acid.

BOSTON, April 2, 1886.

*To the Editors.*

The result in printing on a dry plate by contact, as stated by C. H. T., in the BULLETIN for March 27th, was probably due to excessive over-exposure. I recently saw a negative of a dark interior, which required a prolonged exposure, where the windows showed the same reversed condition, the panes being bare glass and the sashes having a deposit of considerable density. The print from this, of course, had the effect of looking out of the window at night.

One of your correspondents described a similar effect from long exposures in the Exhibition Building at New Orleans some time ago.

Yours, etc.,

C. F. CREHORE.

*Q.*—A subscriber and amateur writes:—Will you kindly give in your next issue your views as to the best method of developing instantaneous exposures on the "Stanley plates." There are no specific directions given with the formulas accompanying these plates. I think many users of this excellent brand of plates may be in the same fix as myself, wanting to know how to develop the plate so as to get the best possible results. Perhaps the makers would print fuller instructions.

*A.*—This question is discussed by one of our editorial staff on the first page of this issue of the BULLETIN. If our correspondent has any special difficulty and will give us the details, we will try to help him out. It is a good plan to send negatives; they often tell more than words about the origin of many troubles.

*Q.*—W. H. P. writes:—Which developer is best, Cooper's Concentrated or Anthony's New Economical Developer? I have been working with oxalate of potash and iron, and I want to know which is the best and easiest to work with in the hands of a beginner, this last or one of the former?

*A.*—Anthony's New Economical Developer is more concentrated than Cooper's and works very nicely; the directions are printed on each bottle. We have been working lately with the iron developer a good deal and find it hard to say which is the best developer, alkaline or ferrous oxalate. For instantaneous work, with very rapid exposures upon very sensitive plates, we should prefer the alkaline, that is, the New Economical mentioned above.

*Q.*—J. H. T. writes:—I am about to put a new roof upon my photo car, and would like the opinion of some one with more experience in this matter. I do not like the roofs usually put on and want to arrange for a quarter-pitch roof. As one side would hardly be enough for sky-light, would it work to arrange sky-lights upon both sides and use dark curtains to cut off the light from either side? What would be the effect of the light coming from either side of the roof?

*A.*—It is not easy to answer our correspondent, as he does not give us the size of his car. We see no objection to the use of a sky-light on both sides of the car with the curtains arranged as he states. The only way to find out about the effect of the lighting from both sides is to experiment with the light upon some subject and note the effects. In some cases we can conceive that this double lighting might prove very convenient, with very dark backgrounds for example.

*Q.*—G. V. S. writes—I wish the Editors of the BULLETIN would give some concise directions for testing toning baths with litmus paper. I will not trouble them with a "long" letter, but simply say that I have repeatedly tried to test my baths in this way; but the change in the paper is so slight that it is difficult to tell whether they are alkaline or not. I would also like to know whether it is desirable to preserve the baths referred to in No. 20 of 1885 issue, and if so in what proportions the ingredients should be added after use the first time.

What is the result of using an overdose of gold in the toning bath? I could probably find out by experimenting; but had enough of that when I started without aid.

*A.*—If our correspondent uses good red litmus paper that has been carefully washed

after being made red, it will most certainly tell him when his bath is alkaline, for it will then turn blue. If his paper does not do this, it is not good. In regard to the toning baths referred to, the only ingredient that it is necessary to add is the gold solution. The quantity of gold to add depends upon the number of prints that are to be toned in the bath. It is generally necessary to add to the bath  $1\frac{1}{2}$  grains of gold chloride for every 400 square inches of prints to be toned, and since the toning gradually adds acid to the bath, it should be kept alkaline by adding bicarbonate of soda. The other ingredients of the bath do not change, but appear to work a little better with age if the bath is clean and not too old.

An overdose of gold will do no harm, but the prints will tone very rapidly, and need to be kept in constant motion and watched closely.

### Views Caught with the Drop Shutter.

A. V. HOSTON, of Albany, N. Y., has sold his gallery to Brown, the crayon artist.

J. K. NAGLE's gallery at Oswego, N. Y., was burned out on March 26th. Insurance, \$800.

S. AUSTIN & SON, of Oswego, N. Y., have bought the Olliver Gallery. S. Austin, Jr., will take charge of the west-side studio.

THE PRANG EDUCATIONAL COMPANY, Boston, have secured the agency for Wagner's photographic colors and photographic re-

touchers. These goods are of very great convenience, and are highly commended.

EDWARD DE GROFF, late with the Northwest Trading Co., at Killisnoo, has gone into general merchandizing in Sitka. He supplies views of Alaska scenery to those who are interested in the great Northwest.

CHARLES A. BRECK has bought the entire plant of the Electro-light Engraving Co., of New York. Messrs. F. A. Ringler and Wm. Kurtz closed up the old firm on April 1st.

CHELSEA, Mass., March 29th.

SIMON TAYLOR, a photographer's assistant, aged 55 years, last night dropped a quantity of cyanide of potassium into a glass of water and then said to the members of his household: "Good-by, all. This is my last drink. I am going from this world," and swallowed the dose. He died in a few moments. Taylor, who was born in London, had been a teacher in a New York primary school, and subsequently a bank clerk in Philadelphia.—*N. Y. Times*.

G. P. HUESTED has sold his gallery at Baldwinville, N. Y., to Werner, formerly of Green, N. Y.

W. H. WALMSLEY & CO., of Philadelphia, send us a number of their handsome catalogues of Optical Instruments. These are models in their way and are very handsomely illustrated. In addition to the general descriptive matters for explaining the various instruments, there are many excellent suggestions for their use and application.

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INDISTINCT PROCESS.

AMEL PHOTO. L. CO., N. Y.

## ON PEEK'S KILL.

DIPLOMA PICTURE N. Y. SOCIETY OF AMATEUR PHOTOGRAPHERS,

*Negative by P. H. Mason, M.D.*

# ANTHONY'S Photographic Bulletin.

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Prof. CHARLES F. CHANDLER, Ph.D., LL.D., *Editor.*

ARTHUR H. ELLIOTT, Ph.D., F.C.S., *Associate Editor.*

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APRIL 24, 1886.

Vol. XVII.—No. 8.

## A POSSIBLE CAUSE OF DEFECTS IN GELATINE PLATES.

THE interesting remarks of Dr. Eder in the *Photographische Correspondenz* upon winter-made gelatine, which we give elsewhere, have recalled some observations we have ourselves made from time to time upon the defects in dry plates. More recently we have been interested in the subject of "bacteria"—those minute organisms that are now proved to be the cause of all putrefactive processes. From our study of these minute organisms, it appears to us that they have a most important bearing upon photographic dry-plate manufacture. Since the manner of handling these extremely small organic forms is not generally known, and as a description of them will show their bearing upon the defects in gelatine plates, we will give a brief review of one of the methods of procedure.

One of the best methods for the identification and separation of these minute micro-organisms, is to place them in some transparent medium spread out upon glass plates and in which they can grow and develop. Now, of all the materials tried for this purpose, Koch, the celebrated German investigator, found that gelatine was the most suitable. As is now thoroughly well known, these bacteria, or their germs, can grow and develop in gelatinous fluids, and, what is more to the point, in these fluids after they have set or become solidified by cooling. To prepare his culture fluid, the bacteriologist takes some clear jelly made with good gelatine, and very carefully heats it to kill all the bacteria in it (for it must be remembered that these organisms are everywhere, and ever ready to grow and develop in suitable media). He then carefully closes the vessel, while it is still hot, with a plug of cotton wool which has also been baked to kill all bacteria that it may contain, and now allows the fluid to stand a few days. After thus standing, it often happens that the germs of the bacteria develop and grow in the gelatine, and their presence is apparent from numerous white specks seen throughout the solidified jelly. The cause of this development of bacteria is, that while the bacteria themselves are killed by heating, their germs often resist many hours' boiling. To overcome this latter difficulty, and produce a culture-fluid free from bacteria, the jelly is again melted and boiled, and if the development of the germs again takes place upon cooling, the same treatment is repeated a third time. By these repeated heatings all the bacteria are killed after they have developed from their more enduring germs. A carefully prepared fluid will remain without specks of decomposition for months. Having finally obtained a fluid free from the germs of bacteria, the experimenter can introduce some that he wishes to study into the slightly

melted gelatine, and, after shaking, can pour it out upon a glass plate previously heated to kill all germs, and carefully protected by a glass cover; this glass plate being placed upon a cake of ice to make the gelatine set immediately. In a few days it will be found that the gelatine will be covered with little spots of various colors, due to the growth and development of the bacteria introduced. Some observations that we made with the microscope several years ago upon the spots found in some dry plates, were to the effect that these spots appeared to have a nucleus, and there was considerable decomposition around this nucleus. In fact they had all the characters of the spots formed in these plates prepared for cultivating bacteria. Since that time we have made a number of observations upon water, and have noted that water in the winter time does not give as much organic life upon standing in closed vessels as the water from the same source does in summer time, the temperature of the vessels in which it stands being approximately the same under both circumstances.

When we consider the way that dry plates are made, also the facts mentioned above about the growth and development of germs in the solidified gelatine, and furthermore, the observations of Dr. Eder upon winter-made gelatine, together with our own notes upon the difference between the water of winter and summer in regard to organic life, we are led to believe that these ever-present bacteria are the cause of all our woes.

It will naturally be asked, What is the remedy? This is by no means easy to suggest, for the very atmosphere in which we live is loaded with the germs of bacteria. The manufacturer of dry plates will have to adopt some method of destroying the germs of bacteria in his gelatine by heating it repeatedly and carefully protecting the heated material from invasion by the germs floating in our atmosphere, until he wishes to use it for making emulsion. When the emulsion is made, the greatest care should be taken that every vessel is made free from the germs of bacteria by thorough heating, and that the various fluids are heated before mixing. Finally, the emulsion should be dried as rapidly as possible in a current of air that has been filtered through thick cotton batting, which has the power of arresting these germs in the air.

We do not claim that these germs of bacteria are the cause of all the spots and pin-holes in dry plates, but suggest that they are a possible cause, and call the attention of those interested in the matter to our own observations mentioned above. If they lead any of our readers to recall any facts they have noticed bearing on the point, we shall be glad to hear from them.

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#### EDITORIAL NOTES.

WE regret to announce the death of MR. GILBERT A. ROBERTSON, the Chairman of the Membership Committee of the Society of Amateur Photographers of New York. He died from an attack of pneumonia on April 13th. He was a genial gentleman and a well-known and active amateur photographer. His face will be remembered at the meetings of the New York Society, and the memory of his companionship will always be a pleasant one.

---

MR. E. ANTHONY, of the firm of our publishers, has just returned from an extensive pleasure tour in the South. He has captured quite a number of scenes with the little Detective Camera he took with him.



It is proposed that the four amateur photographic societies of Boston, Cincinnati, New York and Philadelphia, shall contribute a certain number of lantern slides, from which two hundred of the best are to be selected by the Lantern Slide Committee of the New York Society, and exchanged with the London Camera Club for a like number of slides of English subjects. These latter are to be exhibited before each of the four American societies mentioned above, and then divided equally among them, fifty slides to each. These exchanges are to be made annually, and will be a source of pleasure and instruction to the societies and their friends.

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DURING the session of the Geological Congress held in Berlin some time ago, a series of extremely interesting photographs were shown. The collection contained Grimm's mineralogical photo-micrographs; pictures from the Desert of Sahara; others from Aden by Dr. Vogel; the basalt region of the Columbia River and the Yellowstone region of the United States; New Zealand geyser districts; the Himalaya Mountains; Greenland; Etna and Vesuvius. These pictures show in a most instructive manner the importance of our art as a handmaiden in the development of science.

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In astronomy also, photography has been opening new fields of discovery, its delicate and sensitive eye seeing more than the human organ, and pointing out some hitherto unknown objects in the immensity of space in which our little orb moves. Messrs. Paul and Prosper Henry, of Paris, have been photographing the heavens with a view to making charts of them, and in their work have discovered the existence of faint nebulae hitherto unseen by the human eye, but registered now upon the wonderfully sensitive photographic plates of modern times. Since they have made the discovery by means of photography, more careful observations have revealed these objects to the eyes of the astronomers with powerful telescopes.

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WE are indebted to the Pacific Coast Amateur Photographic Association for a unique invitation to their First Annual Exhibition, held April 6th. The card is a photograph of a prettily designed invitation, in two corners of which are little gems of scenery; the envelope has a miniature photo in the place of the usual postage stamp; while in lieu of the seal, we have another miniature photo of the monogram of the Association. Altogether the design of the invitation is singularly appropriate and neatly done.

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Our good friends Sam C. Partridge and W. B. Tyler, both send us reports of the way the Exhibition is engaging the attention of our San Francisco cousins. The *San Francisco Chronicle* says "The Association has thirty-six members, and a more enthusiastic set of men were never joined together to encourage a mania or cultivate an accomplishment." The reporter further says that in a favored view he saw "mountings and arrangements which were the result of days of work and the conception of an artistic mind." In a few hurried lines from Mr. W. B. Tyler, he says that there are 1,100 prints on the walls and the whole affair will be a great success. We shall give a detailed account later, and must now congratulate our Pacific cousins upon their enterprise in thus stimulating public attention to our beautiful art.

THE Society of Amateur Photographers of New York recently held its second annual meeting, and at the same time there was an exhibition of photographs, from which the "Presentation Print" was selected. The arrangement of the pictures for exhibition was undertaken by Messrs. Dexter H. Walker and R. Baker, and a more artistic result than that which they produced can hardly be conceived. The whole of the prints were arranged upon a maroon background, which was surrounded by a blue framework, formed of plaited fabric with gilt molding. The whole effect was artistic, harmonious, and brilliant in every respect, and reflects great credit upon the good taste of the gentlemen in whose charge the arrangement of the prints was placed.

IN connection with the same Society, it is well to note that they have outgrown their present accommodations, and after the 1st of May will remove to larger quarters at 122 West 36th street, New York. In their new home they contemplate many improvements for the comfort and entertainment of their members and friends.

It is proposed that there shall be a joint annual exhibition by the three societies of New York, Boston and Philadelphia, to be held in one of these cities each year; thus New York would have the united exhibition one year, Philadelphia the next, and Boston the next. This proposition has been favorably received, and steps will be taken to carry out the project.

OUR friend W. E. Partridge, of New York, has been entertaining some of the people of Passaic city with a lantern exhibition, and, judging from the reports we see of the affair, it was a great success. He exhibited a number of slides loaned by Mr. E. F. C. Davis, of the Philadelphia and Reading Coal and Iron Company, and also from Mr. F. C. Beach, of New York. The pleasant manner of speaking which Mr. Partridge enjoys, well fits him for this class of entertainment.

WE have just received a sad letter from our esteemed friend Victor Schumann, of Leipzig, in which he says that protracted sickness has caused the cessation of his photo-chemical researches. He has some trouble with his throat, which has become serious, and for the present must stop the progress of his interesting photographic work. We regret very much to hear this unhappy news, and hope that he will speedily recover. We expected to get from him a paper on orthochromatic photography for the St. Louis Convention; but we are now afraid that this will be out of the question.

MR. F. C. BEACH gave a very interesting address at the second annual meeting of the Amateur Photographers of New York, and we expected to be able to give it in this number of the BULLETIN; but unfortunately it reached us a little too late.

A FRIEND sends the following conundrum to interpret:

"GRATENE, MISH., December 24, 1885.

"DEAR SIR,—I would like to now if you have got the cuads of this late Americane wor shouch as pattle fields Bools ran and gattes burg and all sirneys about 30 thirf ten king about 8 by 12 or near as you can please ancer."

Can any of our readers give us a lift with these "sirneys?"

### A NEWLY-FOUND NECESSITY.

It is indeed wonderful how quickly that which only a few short months previous was merely a luxury, a convenience only to the few, becomes a necessity to the many. In the rapid development and growth of every art and science, when the whole domain of nature is searched through and through to furnish material with which to advance physical science; when an army of workers, each striving to outdo the other, experiment, theorize, and, to a certain extent, make public property, the acquisitions to the solid facts of scientific research; it readily comes about that the facts a few short years ago that were known only to the scientist in his laboratory, or to the student as he pored over the current literature in a dozen languages, or delved in the bowels of mother earth, have become in a great measure a part of the every-day knowledge of the thinking people of to-day. Be it granted that this knowledge now so common is superficial, crude, half digested as it were, yet the fact remains none the less true, that the more easily grasped data have passed from beyond the control and knowledge of those working in special departments. In no department of science is this more true than in photography. Many now living can easily recall its infancy, while but few realize the extent to which the practice of the art has become popularized. It seems as if the old enigma that baffled Ædipus must be added to, that it may include not only the creeping child, the adult, the decrepid old man, but as well the amateur with his tripod, as we meet him every day of our lives, so ubiquitous has he become. So to those of us stay-at-homes who excite our imaginations with those choice bits of fiction—the descriptions of the various summer resorts—especially if we are photographically inclined, miss any mention of a dark room or other facilities for the enthusiast in our art. Often enough do we hear of all conveniences, nay, even of luxuries; absence of all discomforts, indeed, absolutely perfect in all details of management, country surroundings with a metropolitan cuisine. The hunter and fisherman fare right royally; lawn tennis and aquatics, all are provided for; while the amateur photographer is relegated to the stable or the cellar, and even, indeed, looked upon with suspicion, because he temporarily prefers darkness to light. The explanation cannot be that amateurs are too timid, for it certainly requires more moral courage to set up a camera in the presence of the inquisitive and omnipresent small boy, than to promenade arrayed in spotless flannel, armed with racquet, through the streets—although amateurs hardly have the hardihood to tell of their exploits in terms so grandiloquent as sometimes grace the reports of the hunter and the fisherman.

Doubtless our summer landlords will soon find an increase in their resources by catering to the constantly increasing army of amateurs, and are we not within the bounds of probability, when, among the attractions and advantages of a summer resort, we may expect to find especial stress laid upon the presence of a convenient and well-equipped dark room?

R. W.

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A GREAT historical event is announced shortly to take place—no less a matter than the reunion of the Greek and Roman Churches.

The number of cameras that will be present on this great occasion will only be exceeded by those that were focused on the explosion of Flood Rock.

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It is announced by the *Record*, published at Rome, that the Vatican has ordered the canonization of Joan of Arc, the Maid of *Athens*.



## ACTINISM IN THE TROPICS.

BY MAX BOLTE, *of Havana.*

THERE is an old saying, "The bluer the sky, the brighter the day," which perhaps was invented by a person who knew but little about photography, and still less about gelatine dry plates, etc. I must confess that my experience during years under the almost continuous blue sky of the Cuban Island has convinced me that this fine blue sky is, in fact, *not* the very thing for a photographer. On approaching the Island of Cuba (during daytime, of course) it strikes and puzzles the observer that there generally hangs a long set of clouds of grayish-white, and sometimes yellowish, appearance over the Island, which, however, after arrival cannot be found. An old experienced West India trading captain, to whom I made this observation, told me, "Well, that is the evaporation of the ground; for you know this island is nothing but a coral reef, covered with some rotten limestone and rotten corals." I must leave it to scientific men to say whether he was right or wrong. However, I am of the opinion that these clouds in some way must be taken into consideration as regards the strength of the light.

My experience with dry plates (during more than four years) enables me to speak about the light in the tropics, its force and peculiarity, and perhaps some amateurs may find it of benefit to them to spare a few moments in perusing this article.

As a general rule, I must mention that it is advisable to have the camera, etc., in the most perfect working order, and I strongly recommend that the photographer who intends to make outdoor work provides himself with an *extra* cover for his camera, such as the late Dr. Van Monckhoven recommended, for without this precaution it is only too easy that a good many plates will be hopelessly fogged. Protecting my camera with such an extra cover (made of light india-rubber cloth and red medium), and carrying also a bag, made in the same way, to hold the plate holders, I have always been the more fortunate of the amateur companions who went on photographic cruises.

Now as regards the taking of views. I have made exposures as early as 6 A.M. and as late as 6.30 P.M. in summer time (the duration of the day at the latitude of Havana varying only about  $\frac{3}{4}$  of an hour during the whole year), and among my collection of negatives there are many really very good ones which were taken as early and as late as here mentioned.

Let me give here an extract from my note-book:

## DALLMEYER 10x8 RAPID RECTILINEAR.

1882. June	2, 11.00 A.M.	Cathedral Matanzas.....	Stop 4, gray clouds,	3 secs.	Good.
	3, 7.15 "	Bridge Bailen.....	" 2, sunlight,	inst.	Fog.
	8.00 "	" Concordia.....	" 5, "	"	Good.
	4, 1.30 P.M.	Volante (carriage).....	" 5, "	"	"
1883. July	5, 2.00 "	Cascade (trees).....	" 3, "	"	"

## MORRISON C. C. GROUP.

1883. March 28,	9.00 A.M.	Panoramic view.....	Stop 3, sunlight,	inst.	Good.
	10.00 "	Rock and trees.....	" 5, "	1 sec.	"
	10.30 "	Cascade.....	" 3, "	inst.	Fog.
	11.00 "	Tree (laurel de luc, India)...	" 5, "	1 sec.	Good.
1884. Dec. 25,	6.00 P.M.	View (white marble b'd'g)...	" 4, "	3 "	Good.

## MORRISON W. A. GROUP.

1884. Dec. 26,	11.30 A.M.	Interior. Christmas tree....	Stop 4, stop,	18 sec.	Good.
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It is evident that the view of the cathedral (an old Spanish building of yellowish and gray color), which was taken with an exposure of 3 seconds, and with the medium stop of the R. R. Dallmeyer 10 x 8 lens, the light being rather bad, could not be expected to come out well; however, the negative is full strength, not hard, and forms one of the gems of my collection. The second plate, "Bridge Bailen," taken at 7.15 A.M., with same lens and second stop—with instant exposure by means of Cadett's lightning shutter—showed not only fog, but may be called a fine black plate. I must mention that said bridge is close to the sea, there being an unusual amount of light and reflection from the water. The view of the Concordia Bridge, taken under identical conditions, but with Stop No. 5, however, gave a very fair negative. Stop No. 5 of the Dallmeyer lens referred to is nearly *f*-26.

Regarding plate No. 5, waterfall (cataract), I must mention that rather disagreeable circumstances here prevailed. The light, even if the sun was shining bright, was *peculiarly feeble* (this was due to some clouds, which stood almost in complete opposition to the sun), and perhaps also to the strong evaporation of the ground, for splendid tropical rain had fallen the three previous days. The cataract was bounded on one side by rather dark rocks, covered partly with dark green foliage; and on the other side there was a whitewashed wall, which, of course, reflected a large amount of light. A considerable amount of restrainer was used, and the negative may be considered a very good one.

The view of the other waterfall, taken at 10.30 A.M., however, was a complete failure, showing not only fog, but being much over-exposed, and still I must take into consideration that this latter view was taken at a better hour of the day, but with a lens not so rapid working as the Dallmeyer R. R.

The panoramic view, taken the same day as this latter plate, which I expected to be a failure, because of much water and the strong light and reflection, turned out a splendid negative.

My experiences have convinced me that, in order to obtain good negatives of views taken close to the sea, it is absolutely necessary to stop the lenses as far down as possible, and on developing the plates to use a strong restrainer. All the plates which were exposed close to the sea, before developing them with iron, were soaked for about three minutes in a bath of ammonium bromide, about 1 to 25; then washed, and then about five drops of a 10 per cent. ammonium bromide solution added, *i. e.*, using first an old and weak developer, and the strong and restrained developer after. Since November, 1884, I abandoned the iron developer and adhere to a pyro developer, which, I may assert, works as well with the shortest as the longest exposures, and on any kind of plate. The plates mentioned above are of Warnerke sensitive standard, about 20 rapidity. Having practiced on the Continent (borders of the Baltic Sea) and in the interior of Germany, as well as in the United States, it seems to me that for the successful working—*i. e.*, to obtain a fair proportion of good negatives in the tropics—that the preference should be given to plates which range only to about 12–16 on Warnerke's sensitometer.

It is true that the best experienced eye is apt to make great mistakes as regards the judging of the light, but in the tropics I think that this is still far more difficult, for there the light apparently is always seemingly bright. Of course, errors of exposure may be corrected to some extent by means of a judicious development; but it seems to me to be far preferable to learn, by means of a carefully kept note-book, how to give the *approximately right* exposures which every case may claim.

## NOTES ON EMULSIONS.

BY PROF. SPENCER B. NEWBERRY, *Cornell University.**(Continued.)*

THE temperature at which emulsification takes place is also an important consideration. I find that with the method of mixing given above, no harm results from heating the gelatine solution to 50 degrees C. (120 F.), and a great gain in sensitiveness results. An emulsion prepared as prescribed, emulsified cold, gave 19 on the sensitometer; another, emulsified at 50 degrees C., gave the figure 23. Heating to a higher temperature—for example, to 140 degrees F.—as often recommended, seems to have a tendency to produce a coarse precipitate, but on this point my experiments are not sufficiently complete to warrant a positive statement. In regard to the use of iodide, which Captain Abney strongly recommends, I can only say that my best results have been obtained with bromide alone. This is perhaps to be attributed to not having given the iodide a fair trial, and I cannot claim to have experimented thoroughly in this direction.

3. *Washing.*—I find that the washing of the emulsion is very much more easily done if only the hard gelatine required is added after emulsification, and the remaining soft gelatine after the washing is finished. By this means the amount of material to be washed is reduced by one-half; the emulsion remains hard and firm during the washing; and, being of small bulk, requires no draining to prevent the introduction of too much water. This plan has proved a great saving of time and trouble, especially in summer. The simplest and most convenient form of washing apparatus is undoubtedly that described in the Year Book of Photography for 1884, page 116. This consists of a cylindrical vessel provided with an inlet tube and a siphon, by which it is filled and emptied automatically. The shredded emulsion is contained in a perforated vessel supported above the bottom. I find that the cylinder may conveniently be made of tin-lined copper, and have substituted for the perforated porcelain vessel an open cylinder of tin-lined copper, over the end of which a piece of straining canvas is fastened by a rubber band, the whole supported at a convenient height in the outer vessel by means of three glass rods of proper length. With such an apparatus I have washed eighty ounces of emulsion in less than two hours, and so completely, that the wash water showed no opalescence with silver nitrate solution. Occasional stirring hastens the operation considerably.

The temperature to which the finished emulsion is raised after adding the remaining gelatine, has a great effect on its character and sensitiveness, as is stated by Wilson in the Paget prize formula given in Abney's book. I find that if the emulsion be merely melted, say at 40 degrees C., it will be distinctly slow and wanting in density; while a temperature of 55 to 60 degrees is most favorable to strength and rapidity. This is another instance of the good effect of the "removal of the strain" from the silver bromide, of which Abney speaks. However, if the emulsion is allowed to reach 65 degrees C., there is great danger of the formation of a peculiar kind of fog, which first shows itself in the appearance of a distinct positive image on the back of the plate after development, which disappears in fixing, leaving muddy shadows in the negative. I have found this same defect to result from long boiling with small excess of bromide, as in explanation given above.

Heating the finished emulsion to 55 or 60 degrees C., seems to have some-



what the same effect as ripening, since an emulsion so heated will give nearly its maximum sensitiveness if coated as soon as finished. The quality of the resulting plates is however decidedly better if the emulsion be allowed to stand two days before coating.

To give bright, vigorous negatives, the plates must have a matt surface. This can only be attained by using an emulsion rich in bromide of silver and poor in gelatine, and by keeping the coating-room cool. If plates are to be coated in a room at 60 or 65 degrees F., the emulsion may well contain only two-thirds of the quantity of gelatine generally recommended. As stated by Dr. Eder, the most brilliant results are obtained by using a small proportion of gelatine; an increased quantity gives soft negatives and slightly greater sensitiveness. This only applies, however, to emulsions which have been heated to 55 or 60 degrees C. after washing. If this be omitted, the addition of a large amount of gelatine will give slow plates, difficult to develop completely.

I will now give a simple formula, embodying the suggestions given above, which has yielded admirable results in my hands. The quantities given are for 20 ounces of finished emulsion. For the benefit of those who are not yet convinced of the enormous advantage of using the metric weights and measures in work of such nicety as emulsion-making, the approximate English equivalent are given in parentheses.

## A.

Nelson's No. 1 Gelatine.....	8 grams (123 grains.)
Water .....	300 c.c (10 ounces.)

Allow to soak ten minutes; dissolve by placing the beaker in hot water. Add 3 to 4 c.c. (1 dram) of one per cent hydrochloric acid (conc. HC 1 part, water 99 parts) and 50 c.c. (1 ounce 6 drams) of alcohol. Heat the solution, with stirring, to about 50 degrees C. (120 degrees F.) Transfer to a stone-ware bottle, and add, by ruby light :

## B.

Silver Nitrate, in crystals.....	32.5 grams (500 grains.)
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Shake well for a couple of minutes, and add

## C.

Potassium bromide, in crystals .....	28.5 grams (438 grains.)
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Shake as before for two minutes at least, until all sound of crystals striking the bottle has ceased: place it in boiling water, and boil, with occasional shaking, for 30 minutes. The cork must, of course, be removed in boiling; or, better, may be held in place loosely by a piece of cloth fastened over the neck of the bottle by a rubber band. While the emulsion is boiling, put 10 grams (154 grains) of Simeon's hard gelatine to soak in a few ounces of water. When the boiling is finished, pour the emulsion into a beaker and let it stand in cold water for ten minutes. Pour off the water from the hard gelatine, melt it, and decant into it the cooled emulsion, with stirring. Place the beaker of emulsion in ice-water to set. In an hour it will be quite hard, and can then be squeezed through canvas and washed as usual. This should not take over two hours, at most. Now melt in a 20-ounce beaker, 8 grams (123 grains) each of Nelson's No. 1 and Simeon's hard gelatine, pour into this the mass of shredded and washed emulsion. Melt the whole in the water-bath, add 50 c.c. (1 ounce 6 drams) of alcohol with stirring, allow the emulsion to become heated to 55 degrees C. (130 degrees

F.), and remove it from the water-bath as soon as this temperature is reached. Add water, if necessary, to bring the bulk of the emulsion up to 20 ounces. The emulsion is now ready for use, but will give greater density and slightly increased sensitiveness if allowed to ripen for two days. The addition of a small amount of chrome alum, say from 2 to 4 c.c. (34 to 68 minims) of a ten per cent solution, immediately before coating, will be found of advantage.

The above formula is essentially that of Captain Abney, but with some modifications which I have found necessary. It will give a bright, strong plate, showing on the sensitometer perhaps not quite the figure 25 which Abney obtains, but with ease and certainty 23 to 24, which is as high a number as I have found in testing several of the quickest brands of commercial plates. For my own use I prefer a somewhat slower plate; this may be obtained with, I think, a slight increase in density, by using only 27 grams (416 grains) of potassium bromide in place of the larger amount given in the above formula. Finally, the clearest and most brilliant result of all is to be obtained by using only half the quantity of gelatine given above in the last addition after washing, and reducing the bulk of the emulsion by adding as little water as possible. In this case however, the coating room must be very cool, certainly not over 55 degrees F., a condition which can be easily fulfilled only in winter.

*Laboratory of Cornell University, March, 1886.*

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## THE MAGIC LANTERN AND ITS APPLICATIONS.

BY L. H. LAUDY, PH.D.

(Continued.)

*Microscope Attachment.*—Much disappointment is often experienced in working with this attachment, and it is not to be wondered at when we stop to consider the character of the objects and their small size as compared with lantern slides; and before describing the apparatus, it will be advantageous for fixing in our minds its limits and possibilities, to carefully consider the following lines.

The amount of light proceeding from the small object is diffused over the relatively enormous surface of the magnified image. It is of the utmost importance that the object should be brilliantly illuminated if the image is not to be too faint. When we consider that the light on the slide is about half an inch in diameter, when we enlarge this to eight feet we have reduced the light to  $\frac{1}{182}$  of the original power. But in fact the whole of the light is never transmitted, a considerable part of it being lost in various ways in passing from the object to the screen; hence the necessity for intense illumination is at once evident.

It is highly important that we should remember that the condensers also condense the heat rays as well as the light, and if the objects are exposed for any length of time they would be destroyed. This may be obviated by the interposition of certain media, which, while they are pervious to light, are impervious to heat. The most convenient medium is a strong solution of common alum; this is placed in a glass cell between the condenser and the object. The amount of light lost by absorption and otherwise is small, while the whole of the heat is stopped, making it possible to expose objects in the cone of the focus for an in-

definite time without injury to the objects, many of which are mounted in balsam that melts at a low temperature.

While many books tell of objects being highly illuminated on a fifteen feet screen, I have grave doubts as to its accomplishment. Yet many highly interesting and instructive objects can be magnified in a very satisfactory manner; but the number is limited, as is the range of the apparatus; more especially with artificial illumination than with sunlight, for this latter reduces the error to a small fraction; in fact I have made better projections by means of sunlight with inferior lenses than would be possible with the best selected lenses and artificial light.

The microscope attachment consists of a combination of an achromatic objective, with a suitable stage-holder for the objects. This is screwed on to the lantern in place of the ordinary slide projector. The general arrangement will be gleaned from the illustrations. (Figs. 28, 29, 30.)

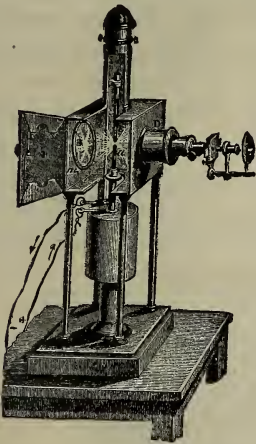


FIG. 28.—ELECTRIC MICROSCOPE.

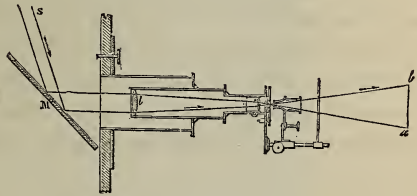


FIG. 29.—SOLAR MICROSCOPE.



FIG. 30.—GAS MICROSCOPE.

Some advise the use of achromatic condensers to produce a flat field, but for my part I have never been able to detect any great advantage. Others again use low powers and amplify by means of a second objective. In all these cases the diminution in the light is so great as to preclude their use.

The powers best suited are  $1\frac{1}{2}$  inch, 1 inch,  $\frac{1}{2}$  inch, with possibly  $\frac{3}{10}$ . They should be made especially for this purpose, and admit as much light as possible with a flat field and good definition to the edges, and it is at this point that we are apt to meet with some disappointment, as a flat field and good definition is a matter yet to be settled by the optician, and as the demand for objectives for the gas microscope is limited, it is not to be expected that any very great improvements are to be looked for in this direction, as the instrument has but a limited application itself. In most cases enlarged micro-photographic negatives are used to produce slides for use with the ordinary lantern, and in this way are made to yield far more satisfactory pictures than to enlarge the objects direct with the gas microscope. And in many cases a slide that could be used to produce a good negative would be entirely unfitted for direct projection. It is necessary that the objects should be carefully selected, and the powers of the objective arranged to suit them.

The objects best suited are parts of whole insects, such as the eye or proboscis



of a fly; then sections of wood, rocks, and crystals of various salts are admirable objects. Live aquatic insects are placed in small glass troughs or life slides containing water. The circulation of the blood in the veins of the distended foot of a frog can also be shown.

The light will require constant attention, and should be forced to its utmost intensity without hissing, and the jet will have to be drawn back so that the cone of light shall impinge upon and cover the slide or object.

It is not desirable in any case to push the magnifying power too far, for the illumination of the image in that case becomes very faint, and if there be any cause of aberration in the lens, whether spherical or chromatic, its effects will be rendered more apparent.

A convenient way of attaching the apparatus to the lantern, as designed by the author, is by means of a hinge on one side of the lantern, so that it may be swung out of position and be replaced by the ordinary objective, which is hinged to the opposite side. This will be found a great convenience, as many times a picture can be projected and in an instant the microscope attachment replaced, thus doing away with the use of two lanterns.

During the siege of Paris, the gas microscope was used to enlarge microscopic photographs of voluminous dispatches, which were reduced to a few square centimeters and conveyed by carrier pigeons. When the dispatches reached Paris they were enlarged by the gas or electric microscopé, and a copy was then made of their contents. This was certainly a most useful and ingenious application of photo-microscopy. (Fig. 31.)

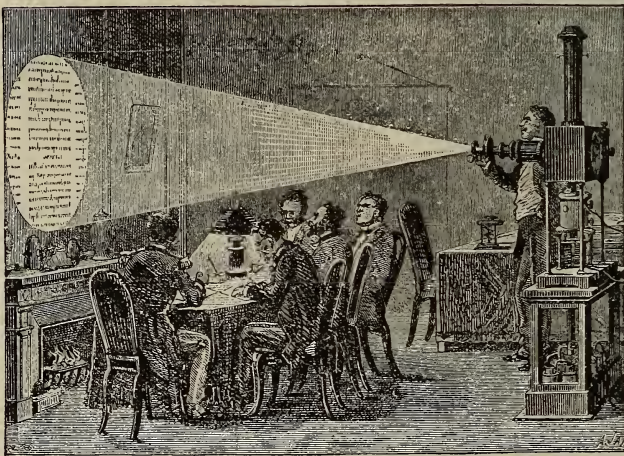


FIG. 31.

*Spectrum Projector.*—Satisfactory results in spectrum analysis are arrived at only by the use of the electric light. Fairly good effects can be produced to show the decomposition of light by the use of the lime light, but when intending to use the apparatus for spectrum analysis, it becomes necessary to use the arc light to volatilize the metals used.

The apparatus used for spectrum projections consists of the usual form or lantern, with the achromatic objective removed. Close to the condensers is fitted an adjustable slit. On a stand is mounted an uncorrected plano-convex lens

of about 12 or 14-inch focus, and on a second rigid stand are mounted two large prisms filled with bisulphide of carbon, these being used to get larger dispersion for a given distance than that produced by glass prisms. The whole apparatus is mounted upon a solid base, which can be rotated through an angle of  $90^\circ$ .

The light from the lantern passes through the narrow vertical slit, and by means of the lens D a distinct image of the slit is produced upon the screen. The prisms filled with bisulphide of carbon are now introduced upon the stand at a distance of about 18 inches from the lens, and the light allowed to pass through them, and at once a beautiful and lengthened spectrum falls upon the screen.

In the spectrum there are an infinite number of tints which merge into one

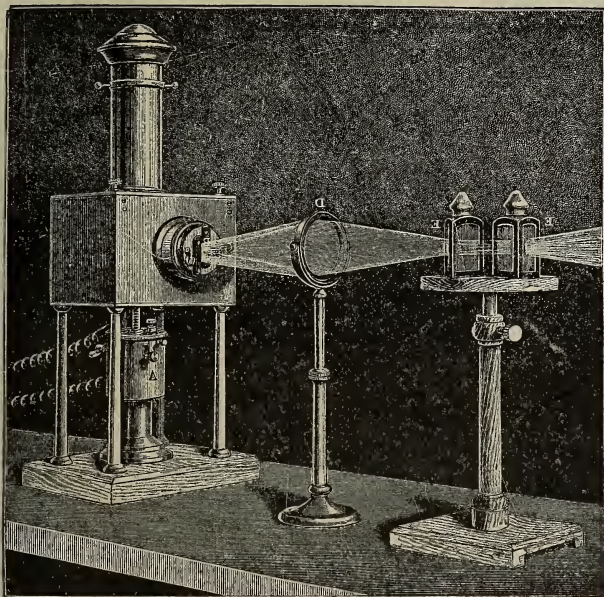


FIG. 32.—SPECTRUM PROJECTOR.

another by insensible gradations, but we usually call them the seven prismatic colors: red, orange, yellow, green, blue, indigo, violet. The violet is the most refrangible and the red the least; the violet occupies the greater portion of the spectrum, the orange the least. To secure the best results the prisms are adjusted to the angle of minimum deviation for the yellow rays.

The entire apparatus as mounted for use is shown in Fig. 32.

A convenient form of lantern, as designed by Browning, of London, is shown in Fig. 33, in which is attached the slit for spectrum projections and the ordinary objective for slide projection, and as the lantern is turned at an angle for the light to enter the prism through the slit, the objective comes directly opposite the screen.

In place of the bisulphide of carbon prisms there can be used a diffraction grating, which is a series of ruled lines upon glass or metal—from 15,000 to 75,000 lines to the inch. They have a much greater dispersive power than a glass prism, and produce a normal spectrum.



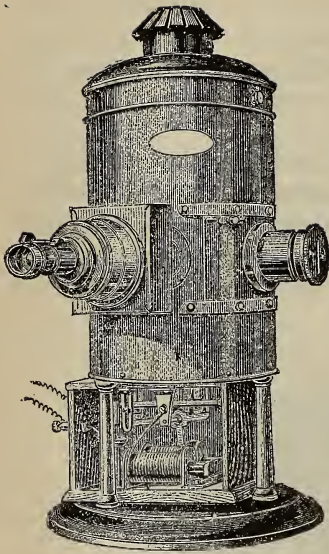


FIG. 33.

approximate the points in proportion as they are burnt away, at the same time maintaining the carbons in the axis of the condensers. The consumption of the positive is much more rapid than the negative, and to overcome this difficulty, Duboscq and Foucault constructed masterpieces of mechanism, which are shown in the Figs. 34, 35. A detailed account of each would be out of place, as it can be found in all works on physics. By means of either of these regulators it is possible to keep at an equal distance the arc of flame unbroken for hours.

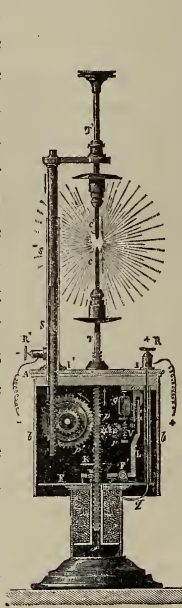
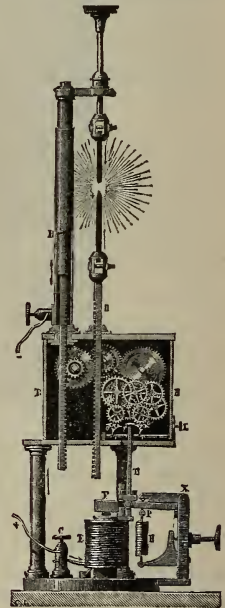
A hand regulator can be cheaply made by a simple device to give an up and down movement by means of a ratchet to which the carbons can be attached, and for most experiments is all that can be desired.

When projecting the spectra of the metals, the lower carbon should be somewhat larger than the upper one, and hollowed out that the metal will not roll away when melted. In some cases several of these carbons are mounted upon a metal disk, which can be rotated, thus changing without stopping to remove the lower carbon. As the greatest heat is required at the lower carbon, the positive wire must be connected with it. Unless this precaution is taken, the metal is liable to jump and spatter, in some cases destroying the experiment. When required to produce the light only, the upper carbon is always connected with the positive current, as the transfer of the particles is from the positive to the negative

Another form of prism, known as the Thollon, is an important improvement in spectrum projections. It consists of a dense glass prism of  $90^\circ$ , with two additional prisms cemented to it. It has the great advantage of being direct vision, and does not require the lantern to be turned at an angle, and its dispersive power is even greater than the bisulphide of carbon. The only drawback to their general introduction is the price, which is much greater than glass or hollow prisms.

With the electric light it is important that the carbon points should be at a proper distance from each other, and to carry out this design many pieces of apparatus have been invented, which are known as regulators, and are divided into hand, clock, or magnetic, or both.

Of the many designs that are to be found, there are only a few which automatically

FIG. 34.  
DUBOSCQ'S.FIG. 35.  
FOUCAULT'S.



pole. The most striking metal to project is silver, for at the instant the current passes through the carbon electrodes, the little globule of the metal is quickly converted into a beautiful green vapor, which exhibits the best set of bands of all the metals. Other metals, as copper, zinc, lead, mercury, and in some cases the salts of the metals, can be used.

It is impossible in this connection to go farther into details, since the subject is beyond the limits assigned to this treatise. For further information the reader is referred to Prof. Roscoe's and Dr. H. Schellen's Lectures on Spectrum Analysis.

*(To be continued.)*

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## ÆSTHETICS AND PHOTOGRAPHY.

BY XANTHUS SMITH.

[Read before the Photographic Society of Philadelphia.]

WHEN the compliment was paid me of asking me to read a paper to you this evening, gentlemen, I consented, only partially realizing the difficulty of finding matter that would be at all interesting to you; and as I entered upon the work of its preparation I began to appreciate fully my entire inability to bring forward anything worthy the attention of the members of this society, composed as it is of gentlemen who, by cultivation, by the most genuine research, and by that best kind of practical knowledge which is got by a love of a pursuit, and large means and time to devote to it, have placed the Photographic Society of Philadelphia at the very front in the art and science of photography. And I must here say that this enviable rank is of no sudden growth. It has not been newly taken on, like so much connected with photography now in these days, when everybody is practicing it. The Philadelphia Society has grown up with photography from the infancy of the science; many of its members who are with us, and some who have passed away, men of the first ability in their profession, have traveled with it throughout its entire progress, investigating, discovering, proving, and building it up step by step to its present advanced position. So that in coming before you this evening to talk about Art in its connection with photography, I would like what I have to say to you on the subject taken as a mere turning over of ideas, and not as the laying down of any fixed rules which are to be supposed to be new to you, or considered paramount; for I feel that in this age of advancement, when so many old doctrines and theories are being superseded by views that stand the light of modern research better than the old ones, one must be careful in the matter of Art too, along with the rest, that they look broadly upon the subject, and investigate well all new ideas that come in, no matter how much they may appear to conflict with what has been previously established; and at my age, and trained as I was upon views which constituted a very different standard of taste from that prevailing at the present time, I feel that there is a danger of old fogysm, and I would probably not have presumed to occupy your time at this meeting, had it not been that I feel by a bringing together and comparison of views, new ideas are often suggested which may be useful.

Most of the writing published about Art now, is in the direction of impressionism, that is to say, critics have built up certain themes and theories about associations of ideas with Art, religious, moral, or emotional, which really have nothing whatever to do with the general ruling principles that govern beauty of

form and design. These critics laud the productions of particular artists, who are doing their work in such new and strange ways that the public are attracted and mystified by them, and would, I think, generally condemn them, were it not that what they read upon the subject of Art is written by persons who do not understand anything of the practical business of the painter. I say practical business, for much as the ultimate purpose is to appeal to the sentiments only, there is, notwithstanding, along with it much of the earth—earthly—even to our invaluable ochres and umbers, and certain mechanical dexterity in their application, just as there is of nice chemical action and careful manipulatory details about photography. To exemplify strongly what I mean, some of the most earnest and enthusiastic of the pre-Raphaelite painters, whose aim you know it was to attain the utmost purity of sentiment, considering all rules of taste and beauty as sensuous and degrading to high art, went so far as to exclude the pigments made of earths from their palettes, and used only vegetable and the most refined chemical colors upon pure white canvas, which was a perversion of the work of painting so far into sentimentalism that it lost its true character and became a strange sort of symbolic illumination. Yet see how much captivating writing there was published about the work of these painters; what enormous prices were paid for their works by those who thought they understood them; and how the majority were mystified by them, having too much good taste and sense to feel that they were right, yet fearing to raise their voice in condemnation of them.

This vague and mystifying writing about Art is a thing that is naturally to be looked for. It is the consequent outcropping of and overdoing of views which are excellent in their origin. As people advance in cultivation, certain refined and poetic ideas are developed which require response in literature and music and Art. A mere transcript of a scene under ordinary circumstances is not sufficient for them, consequently painters strive to clothe their works with certain peculiar and transient effects, or poetic sentiments, that they may prove congenial to the instincts and demands of such elevated tastes. Now it is easy to be seen that it soon becomes a difficult matter to draw the line where the reasonable ends and the visionary begins in such matters. With the universal disposition which we see for people to go to extremes, it immediately becomes evident that we must have a general rushing after some great exponent of such matters for the time being; and if this exponent happens to be a man of genius, like Mr. Ruskin, his influence upon matters of taste is immense, and the few who, though willing to admit the truth of a great deal of that which is set forth, cannot by any means go so far, are either trampled out in the rush of popular opinion, or else left standing alone in the rear, helpless and peculiar. I think I may exemplify the matter somewhat by a reference to the subject of etching. You all know what an interest has grown up within the past ten years in etching; the exhibitions that we have been shown, the money that has been spent in making collections, the keenness with which artists and amateurs have set to work to produce, and the volumes that have been published upon this subject. Now etching is eminently a vague and suggestive Art. It is, gentlemen, the very antipodes of your art, and in this very vagueness and suggestiveness consists its strength with these impression extremists, for on its incoherent scratchings they may build endless wonders of imaginative Art. And in their wild enthusiasm they would stamp out all that is truly excellent and really difficult of attainment in etching, namely, the power to draw correctly, a knowledge of perspective, and

the principles of composition, a subtle appreciation of the value of lines in their greatest delicacy and force, and adaptation to the representation of various textures, together with a happy selection of subjects adapted to the art. The amount of skill and practice required to do this, they say, reduces it to mere professional work, and robs it of those rare qualities which can only come from an exalted imagination through a hand less mechanical. I think the day is probably not far distant when these learned critics will turn their attention upon photography. All that is excellent in the Art will be cast out as mere mechanism, and the ill-focused, fogged, and blemished only, will be held up as works of art. The more fog there is, the more room will there be for the play of the imagination, and consequently the greater will be the artist. What a glorious period will not this be for the makers of dry plates! Might not they and the stock dealers do well even now to be storing up their unlucky brands for such time?

Well, to again be serious, we will turn our attention to the discussion of principles which, although they will bring us down from the visionary to the practical, and stamp us as mere workmen, will, I think, make us none the worse for that. Some of the greatest artists of old, whose works have stood the test of time and sound criticism, were, to a great extent, practical workmen. They knew every part of the business of a painter thoroughly, many serving a sort of apprenticeship to it, grinding the paints and preparing the canvas. They drew from the antique and from life in the most careful manner, and we see in the earlier works of all of them a painstaking thoroughness, not only in their compositions, but in their mode of using the materials; searching out all that they could find of the remains of the best Greek Art, appreciating its excellencies, building upon it, and striving to improve upon it. Here was a tangible reality built up in Art, which, as I say, has stood the test of centuries. Certain principles were wrought out, and their truth and excellence made manifest in the works of DaVinci, Michael Angelo, and Raphael, and the best productions of the Dutch school, which instead of being superseded by anything better to-day, seem rather to stand as a beacon, to the few who can appreciate them, in the wild sea of theories and isms. These principles constitute truth and grace of design, beauty of composition, and harmonious and agreeable effects of light and shadow, qualities that it is desirable we should perceive in nature, either by our natural instincts, or by training. I say by our natural instincts, because I believe there are many persons born with natural taste or power of perception of the beautiful and picturesque—just as there are those born with talent for music or literature—who, though they may never have had opportunities for training in these arts, nevertheless will always search out and appreciate that which is most excellent in them. And where such inborn taste exists, with those turning their attention to Art as it may be practiced with the camera, even a slight amount of time bestowed upon the study of the best art principles which have been established, will add immensely to the enjoyment of the pursuit, by the interest that is aroused to search out or build up good effects; or the gratification of having them suddenly presented to us, as is so often the case in nature; and, above all, the satisfaction of feeling that we are working in accordance with certain great principles or truths.

Now, as I said in the beginning, gentlemen, you are all so familiar with these Art principles, as attainable in photography, that it would be folly for me to occupy your time by going into their details in this paper. I will therefore avail myself of the arrangements you have kindly made for showing a number of views



with the lantern. I have selected a number of fine examples of Art, both in landscape and figure subjects, the works of eminent painters, of which your member, Mr. William H. Rau, has been so kind as to make me slides. These I propose showing, with a selection of slides made from scenes taken from real life and from nature by members of this society, and shall, I think, be able to show in the productions of the members the same art principles which make the works of the eminent painters so attractive and so enduring in their excellence.

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[From Photographische Correspondenz.]

### PHOTOGRAPHIC GELATINE FOR BROMIDE OF SILVER EMULSIONS.

BY DR. J. M. EDER.

EVERY photographer who occupies himself with the production of emulsion, is, to his dismay, well acquainted with the white dots and pin-holes, which appear more numerous in summer time than during the cooler season, and disappear entirely during the winter.

These spots are generally ascribed to the temperature of the water, and this has indeed a good deal to do with it. But, though the manner of emulsification is of considerable influence upon the same, I have convinced myself that, under exactly the same circumstances, one kind of gelatine will give white dots, while the other does not. It has been proven that a gelatine made during the hot season has not the same power of resistance as the one made in cold weather. Notwithstanding all cooling by ice and by ventilators, the "summer gelatine" contains much sooner the germ of decomposition than the "winter gelatine." All manufacturers of emulsion have experienced this.

The gelatine factory at Winterthur, which, induced by my advice, was the first to make photographic gelatine as a specialty, and whose attention had been drawn to this fact some time ago, offers, therefore, only such emulsion gelatine to the trade which has been manufactured under a certain low temperature.

The boiling of hard gelatine of the factory at Winterthur, produced under these apparently subordinate conditions, reaches a high uniformity and excellence of quality. These results are so much more satisfactory, as gelatine is a chemical product not easily defined, and more subject to deviations in the quality than any other.

*Translated by H. D.*

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### DETECTIVE CAMERA PLEASURES.

BY E. G. LOOMIS.

YOUR very attractive BULLETIN has from time to time given space to many excellent descriptions concerning the efficiency and convenience of the Detective Camera, and though I perhaps can add nothing in the expression of my opinion, I esteem it a great pleasure to personally commend to others such a unique, compact and thoroughly ingenious invention. In its neat and handsomely finished case are skillfully placed every essential to good photography, and practically demonstrates the fact that the old and ponderous outfits of other days have fallen into a state of "innocuous desuetude."

Its size and deceptive appearance renders it a handy traveling companion, and the tourist who would save the tedious effort of narrating scenes by the way, can embody them in more permanent form with all accuracy and detail. Bits of

choice scenery, as caught from the moving train; humorous and ridiculous movements and dress of the people you meet; yachts, horses and animated scenes, all possess peculiar interest and form good reviews of past experiences.

As stolen things are sometimes "sweeter," so are stolen portraits and scenes invested with double interest, and productive of pleasant surprises to the innocent, or are sad reminders to the guilty.

This the practical joker can attest by his amusing collection, or the detective prove with his photographed facts.

The Stanley plates are so extremely sensitive, and the cute little shutter such an active racer with light, that Old Sol has of late hidden himself for fear of "having his picture took." Because of this modest trait in the character of our luminary, I have refused to open the Detective's eye, but now that the clouds are commencing to break, I will draw the slide, press the button, and catch the soft and pretty shadows which its brilliancy creates. I would not, however, intimate that the Detective becomes indolent when under a cloud, for it has proved itself a lightning recorder even under this condition, and has a sharp eye which never fails.

Because of its portability and adaptation to such varied uses, it is really an invaluable instrument for all those who can possess but one machine. The six miniature plate holders are such as can be easily carried in the pocket, and the rambling amateur can secure a dozen negatives with no perceptible effort or loss of time. I am very much in love with the Detective, and consider it one of the neatest productions of its class. So soon as its construction will admit of its being loaded with the new negative paper, the last bar to complete perfection will have been removed, and the wary operator can shoot everything on the quiet to his heart's content. I have surprised many friends with its beautiful results, and at the proper time, when I can secure suitable subjects, it will be a pleasure to show what the Detective is capable of, even in the hands of an amateur.

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### OUR ILLUSTRATION.

#### ON PEEK'S KILL.

FORTY miles up the Hudson the river turns abruptly to the westward, and entering the Highlands between Dunderberg and the Manitoe Mountains, again veers to the north, past Anthony's Nose. If the railroad bridge across the creek, near the New York State Camp Grounds, were taken away, one might easily mistake said creek for the continuation of the river. Such an error was made in the early part of the seventeenth century by a Dutch navigator named Jan Peek.

Tradition tells us, if history does not, that he ascended this creek, which bears his name, to about the point represented in our illustration. That he remained there all of one winter, imagining that he was still on the course of the mighty Hudson. The old Church of St. Peter's is near by. Built a century and a half ago, it is still standing among many old grave-stones, whose dates go back into the sixteen hundreds. Within a stone's throw is the famous Gallows Hill, on which Israel Putnam hung the British spy, August 7, 1777. An old manor-house, once occupied by Washington as headquarters during the Revolution, and an old building, noted as a stopping place for the New York and Albany stage-coaches, also still exist in excellent condition.

The building shown in the picture is the pump-house of the Peekskill water-

works, that corporation having taken advantage of the stream that comes from the mountains of Putnam County to supply their village with pure water.

P. H. MASON.

[The reproduction of Dr. Mason's little gem of scenery upon the most picturesque part of the Hudson River is remarkably well done by the well-known indotint process, to which we are indebted for so many of our illustrations.—Eds.]

### THE ST. LOUIS CONVENTION.

TIME is hurrying along, and from all quarters we hear of preparations for the great event of June 22d. Our advices from *Secretary* McMichael are very encouraging, and he feels in good spirits as to the result. He says: "In the stock department for St. Louis there is now sold as much space as there was last year, and orders are still coming in. It begins to look as if there was going to be a great rush. From all quarters we have reports of large photo exhibits, and the competition is likely to be very sharp."

We give with this issue of the BULLETIN a plan of the Exposition building showing the location of some of the exhibits. The names given are those furnished to us by Mr. McMichael when he sent us the plan for publication, and many of the spaces that appear blank have since been secured. We were unable to fill them in and obtain the cut in time to go to press, hence the omission.

### THE ANTHONY PRIZES.

As an additional inducement to those who exhibit pictures at the St. Louis Convention in June next, our publishers have offered \$150 in prizes for the best pictures made upon Stanley Dry Plates with Dallmeyer lenses, and printed on N. P. A. paper. The awards are to be made as follows:

\$50 for the best 18 x 22 portrait.

\$50 " " " six 8 x 10 views.

\$50 " " " twelve cabinet photos.

The successful pictures, and the negatives from which they were printed, to become the property of E. & H. T. Anthony & Co.

Merit to be determined by three judges, who will be appointed at the time of meeting.

Pictures to be marked: "Competition for the Anthony Prize."

*All the pictures must be made from negatives taken since the Buffalo Convention in 1885.*

### EXHIBITION OF SCIENTIFIC PHOTOGRAPHS IN BERLIN.

*To the Editors of the BULLETIN.*

DURING the great convention of German scientists in Berlin, in the month of September, an exhibition of scientific photographs will be held in the rooms of the Royal Berlin Academy. All foreign scientists are invited to contribute to the exhibition. Messrs. Glatz & Schering, of New York, have kindly consented to collect materials for the exhibition, and to forward them altogether to Germany in the month of August, so that the expenses may be reduced to a minimum. The same gentlemen will give all further information about the matter.

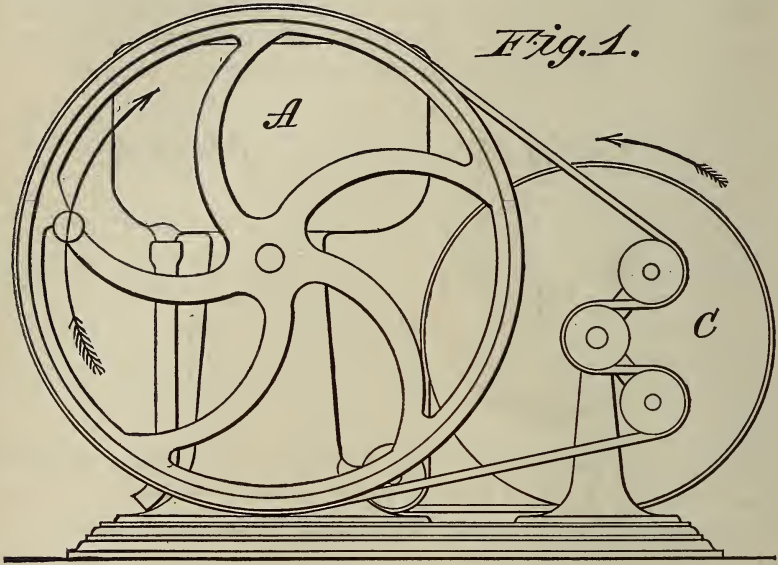
DR. H. W. VOGEL.





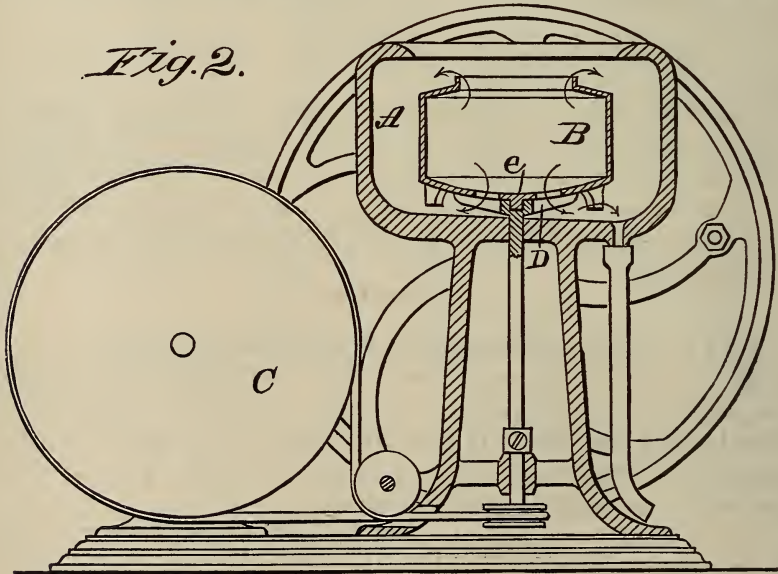
### HENDERSON'S CENTRIFUGAL EMULSION MACHINE.

FIG. 1 represents a side elevation, showing the large driving wheel at the left. From this a belt passes over two tightening pulleys around the pulley on the axis of the second driving pulley *C*. The large driving wheel is 18 inches in diameter, and when revolved at ordinary speed generates a speed of 833 revolutions



per minute in the second driving pulley *C*. In practice such a high speed is not necessary; it may be reduced one-quarter with satisfactory results.

Fig. 2 shows the machine in sectional elevation. *A* is the outer vessel of

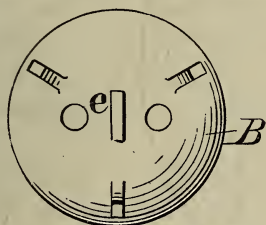


iron from one side of which drops a rubber pipe, as shown, for conducting off the waste water. A vertical shaft passes through the bottom of *A*, having on its lower

end a horizontal pulley, which is connected by a belt with the pulley *C*. Upon the upper end of the shaft sets the emulsion vessel *B*, which is removable and has one or two small holes in the bottom as shown. It is also provided with a projecting rectangular lug (see plan view, Fig. 3) in the center, and three smaller lugs which act as feet to hold it in an upright position when removed from the shaft.

Fig. 3 is a plan view of the bottom of the emulsion vessel *B*. Fig. 4 is a plan view of the upper end of the driving shaft, showing the projections *D* which holding the vessel *B* steady, and the slot in which lug *e* of the vessel *B* fits.

*Fig. 3.*



*Fig. 4.*



To operate the machine the driving hand-wheel is revolved, which at once, through the belt and pulleys *C*, gives a high speed of rotation to the vessel *B*. The emulsion is then poured in at the top and is immediately thrown by centrifugal force against the side of the vessel. As soon as it is full, the supernatant clear liquid is thrown out at the top into the outer casing *A*, and is carried off by the waste-pipe below. When the machine is stopped, any liquid remaining in *B* drains out through the small holes in the bottom to *A*, leaving the bromide of silver, free from gelatine, in the form of a crust on the inside side of the emulsion vessel *B*.

In using small quantities, a smaller vessel is provided without drainage holes.

It should be stated that the vessel *B* is termed a basket and is silver-plated. We believe the invention is patented, and is claimed by Mr. A. L. Henderson, the inventor, as being an improvement on Plenner's centrifugal emulsion machine.

Emulsions which will work extremely clear and rapid may be made with the bromide of silver obtained in this machine, doing away with the tedious operation of washing.

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Nor a few comical mistakes are made by beginners in the "art science," as we love to call it. We have all heard of the man who developed his ground glass; but the man who tried to put the plate in the holder through the slit from which he drew the slide is of later date; and the tyro who opens his box of plates before reading the directions to open in ruby light only, is the source of considerable income to the plate manufacturer.

But for numbers the amateurs (and professionals too, sometimes) who take out their lenses to clean them and put them in backwards, exceed all the rest. A list of the mistakes made by beginners through ignorance, and old workers through carelessness, would contain the record of many laughable blunders.



# ANTHONY'S Photographic Bulletin.

EDITED BY

Prof. C. F. CHANDLER, Ph.D., LL.D.,

Aided by ARTHUR H. ELLIOTT, Ph.D., F.C.S.,  
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Advertisements should reach us not later than the Saturday preceding the issue for which they are intended, otherwise we cannot promise to publish them in the succeeding number. It is also necessary to notify us of any alteration before the date above mentioned, and to state for what period the advertisement should be continued—whether for one, six, twelve or twenty-four issues.

*E. & H. T. ANTHONY & CO., Publishers.*

## PHOTOGRAPHIC SECTION OF THE AMERICAN INSTITUTE.

MEETING March 6th. President NEWTON in the chair.

The Secretary, Mr. O. G. MASON, reported the reception of ANTHONY'S PHOTOGRAPHIC BULLETIN, the *Eye*, and a number of photographic illustrated catalogues.

The usual vote of thanks was passed for the above donations.

The Executive Committee reported that the subject selected for the evening was the "Early History of Photography," with an introductory paper by the Vice-President of the Section.

That at the next regular meeting, May 4th, there would be a lantern exhibition and a talk concerning the early photographers of New York City.

The following paper was then read by Mr. J. B. GARDNER:

*Mr. President and Gentlemen:* Before reading the introductory paper of the evening, allow me to repeat a short extract from the paper read at the last meeting, as this extract has some bearing on the subject we are now to consider:

"In regard to the discovery of photography, it cannot be said that any one person should have the entire credit or honor of originating it. The principles on which it is based have been slowly unfolding since the first observer noted and recorded the effects of light on the various kinds of mineral and vegetable matter. These notations have been gathered from time to time by such minds as were by their previous culture capable of their reception, and finally combined in such manner and so utilized as to bring them into public notice. When thus publicly known, they have been hailed as discoveries, and the entire credit awarded to him who first made his application of these principles the most available in forwarding the interests of society.

"Now, although Daguerre has the honor of making the first sun-pictures, there were others who worked out the same problem quite as early as he. Talbot, in England, and Professor Draper, in America, were not behind the Frenchman in their explorations, though they were not so loudly heralded to the world, or so notably rewarded for their labor by the governments they respectively served. Hence Daguerre is commonly acknowledged to be first in the ranks, though his process was entirely *inapropos* for portrait work.

"This process he made public in 1839, the same year that the electric telegraph was brought into notice by Professor Morse. These two discoveries, as they are called, have been marching on together, making giant strides every year since their introduction, until now there is scarcely a town or hamlet in the whole civilized world where is not manifested these most wonderful appliances of light and electricity. Thus the ideal of Shakespeare has been more than realized, where he would have the attendant of Prospero compass the whole world in forty minutes."

It may be thought by some, perhaps, that the subject we have chosen for this evening's consideration, viz., "The Early History of Photography," can be of no practical value to the practitioners of this art at the present time. But when it is remembered that much of this history is as yet unwritten—that its most interesting portion is only known by tradition, and even this to a very limited extent—it certainly concerns us, as well as all who take any interest in the art, to gather up and record the experience, so far as possible, of that class that are now rapidly passing away, and whose testimony may aid us in giving honor to whom honor is due. But before calling up these witnesses and paying that tribute of respect that

is due for their noble achievements in this field of art-science, and especially for their long and wearisome researches and labors in bringing this art to its present state of perfection, it is needful to go back to the foundation on which they built, and briefly restate the records that stimulated them to their noble work.

The camera obscura, and the effect of the sun's rays on different substances, are the two main agencies to which photography is due. The first named (the camera obscura) was invented by a physician of Naples (Giovanni Battista Porta) three centuries ago; and the changes in both color and quality of various kinds of mineral and vegetable matter, when exposed to the sun's rays, have been more or less noted from the earliest records of history. But the first direct account that points to photography, was the experiments of Wedgwood and Sir Humphrey Davey, in 1802. But they, no doubt, were students of Scheele, who published the result of his philosophical labors in 1777. His researches seem to have had a powerful influence upon the scientific world, for he was followed in similar lines of study by Sir Wm. Herschel, Count Rumford, Sir Henry Englefield, and a host of others too numerous to mention here. And thus was gathered a mass of material which brought the world to the verge of the announcements of Daguerre, Niepce, Talbot, and Draper.

As an experimentalist, Sir John Herschel appears among the first in the ranks. He was the discoverer of hyposulphite of soda in 1819, and first used it in photography in 1839. He was the first to use glass in making sun pictures in 1844, and the first who called attention to the changes of effects produced in the use of various salts of iron as a printing or developing agent.

Then come the names of Niepce, Talbot, Hunt and Archer, whose progress seems to have been more pronounced after the announcement of Daguerre in 1839.

Niepce gave his first paper on sun pictures before the Royal Society in 1827. This was instantly noted by Talbot, and led to the process which he published in 1839. From this period he continued his experiments until 1842, when he procured a patent under the name of calotype.

When Daguerre, in 1839, published his process, there immediately appeared a host of experimentalists in England, France, and America, and all claimed to be first in some branch in the art; and it is at this point in its history that it is the most difficult to decide to whom the greatest praise rightly belongs.

The most essential improvements in Daguerre's process were to make the pictures less perishable, and shorten the time required for making the impression. The first of these was effected by Hizeau, in 1840, by a gilding process, composed of chloride of gold and hyposulphite of soda. The second was accomplished by Dr. Paul B. Goddard, of Philadelphia, in 1840, by the use of bromine. It is generally acknowledged that LeGrey was the first to use waxed paper, Niepce De St. Victor, albumen, and Talbot, gelatine. With these substances, in connection with the salts of silver and iron, and iodine and bromine, and mercury, we have the chief elements of both the daguerreotype and photograph.

The next important step in the art was the discovery of gun-cotton by Schonbein, in 1846. Finding it was soluble in equal parts of ether and alcohol, or spirits of camphor, the solution was named collodion, from the fact of its adhesive properties. It was first successfully used in 1850.

There are a number of claimants of this discovery, the most prominent of which are Messrs. Archer, Fry and Diamond, of London, and also Le Grey and De la Motte of Paris.

The same year of its discovery (1846), Dr. Josiah Curtis, of Boston, made a solution of it and introduced it to the medical profession, and from that time to the present it has held its place as a medicinal agent.

Frederic Langenheim, of Philadelphia, claims to have experimented with collodion for photographic purposes as early as 1848. His first efforts were not, however, altogether satisfactory, and Frederic Scot Archer, of England, is generally accredited as having first used it successfully in 1850. In 1851, the ambrotype began to take the place of the daguerreotype.

Mr. Robert Hunt, of England, was also among the first explorers in the art, and the photographic profession is greatly indebted to him for his long and arduous labors.

We now come to photography as known and practiced in this country, and among the earliest, we find the names of Draper, Morse, Walcot, Johnson and George W. Prosch. Each of these claim to be first in portrait work, and their testimony is so evenly balanced that it is now difficult to decide to which of these gentlemen the honor is really due.

The testimony of all except Prosch has been duly recorded in the first volume of *Seeley's Journal*, "Root's History of Photography," and "Draper's Memoirs," and those, therefore, who



would know more definitely of this matter, are referred to these books.

The statement of Mr. Prosch is, that Mr. Morse came to his shop and ordered an apparatus as described in a pamphlet, which he said contained all the particulars of Daguerre's discovery. Mr. Prosch says, "The work was at once undertaken and in a few days completed. But just at this time Mr. Morse was called away to attend to matters he thought of more importance, and I, being quite anxious to know how the thing would work, ventured to try an experiment on my own account. At this time my shop was on the northeast corner of Nassau and Beekman streets. Nearly opposite was a church, and a partial view of the City Hall and Park, surrounded with an iron fence. Outside this fence were a number of coaches and hackmen, some of these on their seats apparently fast asleep. With this view before me I coated a plate and made the exposure from the window of my shop; I then subjected it to the vapor of mercury, and when I took it from the bath, to my great delight, I saw the ghost of a fence, the form of a carriage and its attendant driver, together with the horses in front of him. It is well, however, that this view was in reach of my natural vision, or I might have been puzzled to tell with any degree of accuracy the minutes I fancied were recorded on my plate. Suffice it to say, I was not proud of my success, and hence resolved to keep the experiment to myself; and did so, till long after Morse, Draper, Walcot and Johnson had each pronounced themselves first who made daguerreotype portraits in America. It is probably true, that both the men and the horses I took were fast asleep, but they were none the less portraits, and the first I believe ever taken in this country. If I remember correctly, it was some time in the latter part of August, 1839."

In an extract from a letter to a friend, dated February, 1855, Mr. Morse says, "I was in Paris when Daguerre's discovery was announced, in the winter of 1838-39. Early in the spring of 1839, I was invited by Daguerre to see his results in private, for his process was then secret, awaiting the action of the government respecting the pension to be granted him in case he would publish his process. I immediately wrote to my brothers announcing the discovery, which letter they published in the *New York Observer* in April, 1839. This, I think, was the first notice of the discovery in America.

"In July or August of the same year, I think, Daguerre received his pension, and the process was published. Some copies of the work

were immediately sent to this country, one of which I received the latter part of August, and immediately had made for me the apparatus from the description in the book.

"When this was completed, I was soon enabled to verify the truth of Daguerre's revelations, and my first experiment crowned with any success was a view of the Unitarian Church from the window on the staircase, from the third story of the New York City University. It was in September, 1839.

"In October of the same year, I took a portrait of my daughter, and also in group with some of her young friends. They were taken on the roof of a building in the full sunlight, and with the eyes closed."

How much earlier than the above dates Professor Draper made his first portrait I have been unable to ascertain, though he frequently refers to his being first in several papers published between the years 1840 and 1855.

Having now given in this introductory paper quite sufficient matter, I think, to provoke discussion for the rest of the evening, I shall leave it to my fellow members of the section to decide who are the rightful claimants to the various noteworthy discoveries in the art.

At the conclusion of the reading, Mr. Mason read a short article concerning the discovery of Daguerre, published in the *Franklin Magazine* for April, 1839.

President Newton also read the following from "Prof. Draper's Memoirs" (page 215):

"That it was possible by photogenic processes, such as the daguerreotype, to obtain likenesses from the life was first announced by the author of this volume in a note to the Editors of the *Philosophical Magazine*, dated March 31, 1846, as may be seen in that journal for June 1840, page 535. The first portraits to which allusion is made in the following Memoir, were produced in 1839, almost immediately after Daguerre's discovery was known in America."

Mr. Newton, in subsequently speaking of the different claimants to making the first photogenic portrait in America, expressed the belief that it would probably never be known who was really first. That no doubt a number of persons honestly believed themselves to be first, when others unknown to them had solved the same problem perhaps at an earlier date. That it was quite reasonable to believe that men who had pursued similar lines of study should work out the same problems quite independent of each other, and each regard themselves first in their exploits.



Mr. Mason then exhibited a daguerreotype made by himself in 1850; Fox Talbot's illustrated "Pencil of Nature," published in 1844; two volumes of *Snelling's Photographic Art Journal*, one published in 1850, and one in 1856; also prints on albumen paper made in 1856; together with a large number of other pictures made in the early years of the art. These books and pictures were examined with more than usual interest, and led to a multitude of questions, all of which were affably and expertly answered by the lucky owner of the above named antiquities. Mr. Mason also stated that he had been lately printing on albumen paper that was made a number of years ago, and had been carefully kept, but on finishing the prints they assumed the same yellow color so often noticeable in old photographs. He therefore concluded that the faded appearance so often seen might sometimes be due to the paper or albumen, rather than imperfect cleansing from the hypo bath—the usual cause attributed for the fading of prints.

Mr. Newton then stated that he had lately made a very successful experiment with a negative that was greatly under-timed in the shadows, on account of the extreme contrasts, in a view from nature he had taken in Central Park. The portions of the picture that were fully out, he said, I covered with machine oil, and then subjected the plate to the following compound:

Bichloride of mercury...	60 grains.
Water .....	10 ounces.
Iodide of potassium....	120 grains.
Water .....	6 ounces.

By this treatment I succeeded in bringing out the darker portions without disturbing the lighter. I then removed the oil with alcohol, and thus saved a negative that would otherwise have been useless.

There may be others, said Mr. Newton facetiously, who have used the same mode of treatment, but so far I have not heard of them, hence, shall claim originality in this until some other brings positive proof of his priority.

There is one thing more I wish to say, and that is concerning a statement I saw a short time since in one of our photographic journals respecting the use of nitrate of lead. The inquirer asks the editor if he will oblige him by sending my formula for freeing prints from hyposulphite. The editor answers, "I do not know the formula, but you can use ten grains of lead to each ounce of water." This advice, in my judgment, if followed, would ruin the prints. In my practice I have found  $2\frac{1}{2}$  grains

of lead to each ounce of water quite sufficient. And even this amount would be quite likely to injure the pictures if not a trifle under-toned, and a sufficient amount of acetic acid added to the lead solution to prevent any incrustation on the surface of the albumen.

Mr. Moss then exhibited a number of prints illustrating a new method of process work. By this method, he said, wash drawings could be accurately reproduced, and a variety of art work that had been up to the present time quite beyond the range of photo-mechanical printing.

After the examination of these pictures, and several inquiries respecting their cost and the rapidity with which they could be produced, a vote of thanks was passed to all who had contributed in making the evening one of unusual interest, and the section then on motion adjourned.

### THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.

REGULAR MEETING, MARCH 9.—*Continued.*

MR. BEACH then spoke of another case where he was informed by a former member of the society that a plate was in the developer for six hours. It was an Inglis plate and had been under-exposed.

Development was commenced with Hoover's normal pyro and potash developer, that is 1 dram of the pyro solution and 1 dram of the potash solution to each ounce of water.

As soon as it was noticed that the high lights were coming up too dense or fast, the developer was immediately poured into the graduate. The developer was thus diluted with two ounces of water to each ounce; for example, if the developer measured 2 ounces, four ounces of water was added, and also four drams of the potash solution. It was then poured on to the plate, the dish covered up, and the plate left to soak for six hours. At the end of that time a very fine negative full of half-tones was the result. Another example cited was the use of the ordinary ferrous oxalate developer.

The under-exposed plate was put into a developer consisting of twelve ounces of saturated solution of oxalate of potash, and one ounce of a saturated solution of sulphate of iron.

Concerning this developer, Mr. Beach said the development was continued until the image is moderately or fairly brought out; then the developer is strengthened up as high as one part of iron to four of oxalate, which

brings up the negative to full strength. The party said that if he used a strong developer in the first place, the picture would be too thin, but by commencing with the weak developer and gradually strengthening it, he obtained better density.

I was in hopes that we would have more to show this evening.

I would like to hear from some other members on the subject, who have experimented since our last meeting.

MR. ROOSEVELT—I tried those directions of yours which you kindly sent to me, but the results were not very satisfactory.

The first experiment I made, in which I used the Seed developer, did better for me than anything else. I had the ferrous oxalate and the Seed developer that I made myself, and they were both fresh. The ferrous oxalate was mixed to apply to the positive paper. I also had an old ammonia developer, which I mixed up, besides a potash developer which I obtained from Scovill, that I knew nothing about. In all my eight experiments the Seed developer came out the best. I reported to our President the results which I had obtained, and he stated to me that I ought to try the plan he mentions here in this letter, namely: of taking ten grains of pyro to the ounce, and put the plate in that for two minutes, and, without washing it off, put it in another tray containing a dram of soda solution to two drams of water, and add an ounce of soda solution gradually. I did that, but I found that I did not get anything. (Laughter.)

Then I reversed the plan, not exactly as he directed, but I thought I would try it the other way, and I put the next plate in the weak alkali solution, and let the plate remain there for two minutes, and I poured the pyro solution on that, and got the same result as I did the first time. (Laughter.)

The next direction was to put in six grains of pyro to the ounce. He says: Combine the Seed developer and six grains of pyro—and I took the normal Seed developer, and put in six grains of pyro to an ounce of that developer, and I poured that on the plate without any soda at all, and the plate came out very nicely and very strongly. It came out rather slowly, but made quite an effective plate.

The *President* gave me a third suggestion, which was to develop the next plate in the regular normal developer, which I did, and it came out in the ordinary way.

MR. BEACH—Have any of the other members anything to say on this subject?

MR. NEWTON—At the last meeting I prom-

ised to show a couple of negatives, one exposed at two seconds and one exposed at twenty seconds. But the last time I was here I argued that an over-exposed plate required a weak developer. About that there can be no question in the mind of any one who has ever tried it, and it would be fair to infer that if an over-exposed plate required a weak developer, an under-exposed plate would require a strong developer. That would be a fair inference; but, as I said before, it is a waste of time to speculate on anything which is so easily demonstrated. You cannot arrive at any sure conclusion by speculation, whether you adopt the allopathic or homœopathic process to argue from.

In due time I hope the Dry Plate Committee will have something to say, and of all the examples that have been spoken of here to-night we absolutely know nothing. We do not know whether the plate was an under-exposed plate or not. If one of them had been developed in the normal way and the other in the way described, we could have some opinion about the effect of the two kinds of development; but he started with a strong developer. That is the statement.

MR. BEACH—He started with the normal developer.

MR. NEWTON—I take it that what he calls the normal developer is the usual strength for a properly exposed plate.

[Mr. Newton then exhibited two negatives and passed them around. One, he said, had been a normal exposure of two seconds, the other twenty seconds, and they were so evenly developed that it was difficult to judge which had the longer or shorter exposure. They clearly demonstrated the necessity of using care and skill in the development of dry plates.]

MR. NEWTON, continuing, said: There is a shade of difference, and the one that appears to be the longest exposed was the shortest exposed. The one that was exposed twenty seconds was developed with a very weak developer, and it is as easy to make a good negative out of a twenty-second exposure as it is out of a two-second exposure, if you know how to do it.

MR. ROOSEVELT—And your idea is that the reverse proposition is equally true, and that when it is under-exposed you must use a strong developer.

MR. NEWTON—Yes. In reference to one statement, that where a strong developer was used it was objected to because it makes a thin negative, I will say that it would have made a strong negative with oxalate.



Mr. BEACH—He said that his experience was that it was best to commence with one of iron to twelve of oxalate, and then to strengthen up by the addition of iron.

Mr. NEWTON—You cannot get a good negative with the same exposure with the ferrous oxalate as you can with the alkali.

Mr. BEACH—These were all instantaneous exposures.

Mr. NEWTON—I would not undertake to develop a plate that was not fully exposed.

Mr. BEACH—Mr. Spaulding, what has been your experience?

Mr. SPAULDING—I have not had very much experience. I made one experiment with reference to this discussion, but it did not seem to me that it was very important, and I did not intend to speak of it, but it does seem to fall in line with what has been said here to-night.

I exposed three plates, under exactly the same conditions, at the same time, and developed each one in a different way from the others. The first I developed with the normal soda developer, and got very good results. The second one, I began differently with.

I first filled the tray with about a dram of the solution of carbonate of soda and three ounces of water, and after soaking the plate about a minute, gave it a good washing and then placed it in a normal developer. In this I followed the suggestion given by Mr. Cooper some time last year. I left it in there about a minute. The result differed from that in the first experiment in no perceptible degree. There was perhaps a little more detail, but the difference was hardly discernible. In the third case, I mixed up a normal developer, three ounces in all, and placed the plate in that, and then instantly, or within a second or two I should say, I poured in water, so as to make the whole of it nine ounces. Although I had increased the whole amount three times [multiplied by three], to my great surprise the high lights appeared on the plate, it seemed to me, as quickly as before. I did not time it at all, but I can judge of the time to within a few seconds. The plate was an improvement on both the previous experiments. Although not so intense, the detail was fully equal to that in either the first or the second cases. There was more evenness of distribution, and on the whole, according to my judgment, the third plate was superior to either of the others. This difference was not very great, but what surprised me most was that the development began so quickly with a very weak developer. It seemed after a time to

stop, and then I placed the plate in the normal developer. In other words, I finished up the plate in the normal developer.

Mr. BEACH—In a strong developer?

Mr. SPAULDING—Just after I took it from the weak developer I put it in the normal developer, and my impression is that at the very last minute I did add some extra pyro.

Mr. BEACH—Mr. Ripley, can you give us a little information upon developing under-exposed plates?

Mr. RIPLEY—I do not know that I have any startling experiences to relate in connection with the matter. My most successful practice has been to commence with the weak developer. I use the normal quantity of No. 1 (the pyro) and No. 2 (the alkali), and three and even four times the amount of water, according to my subject, and when the details are well started out I then transfer the plate to a strong developer, that is with the normal quantity of No. 1 and No. 2, or rather a smaller proportion of water than an ordinary alkali developer would contain. That wants to be done, I find, before the plate is developed, and immediately after the fair starting of the details. But there is one point which is always well to observe, that is, never force the negative to the foggy point. Sometimes exposures are so very quick, and the circumstances under which they are made are so very adverse to obtaining a good photograph, that intensification is necessary; but I never believe in forcing a negative, but always work for detail and brilliancy.

If the negative is developed beyond the fogging point (that is fog produced by over or forced development), you never can obtain a brilliant, crisp-printing negative. Should it be too thin and you intensify, the veil of fog is correspondingly increased, and you gain nothing. It is better to stop the development soon enough to prevent the veil of fog, and then intensify.

Mr. BEACH—Mr. Cook, have you done anything further in the way of developing instantaneous plates?

Mr. COOK—I have made some very nice negatives lately, but I developed with a normal developer, and they came up without any particular trouble, or without any wonderful experience; but I had one negative the other day that I wanted to take for a friend of mine. He was a lawyer, and he wanted to use it in a case, and he wanted to show on the picture a certain particular spot. There was a high fence which threw the sidewalk in the shade, and the sidewalk was the only thing I wanted



to get; all the "high lights" came out nicely also. All the rest of the street that was in the shadow, I could not get any detail out, or anything that was at all satisfactory, and I kept on increasing the alkali in the developer until the plate was coated with silver, but I could not secure satisfactory results.

Now I would like to know from some member of the society if there was any way of bringing out the detail of that portion of the plate that was in the shadow, where there was not sufficient light thrown. I had no difficulty wherever the subject was properly illuminated, but this shadow part of the picture I could not get.

MR. RIPLEY—If the gentleman had followed the plan I referred to, of developing the plate direct in the watered developer, he would have had fuller detail than he otherwise did have. The details in the shadow would have appeared, although they might not have been as satisfactory as he could have wished; but if he had strengthened it after he had started the detail, and used a stronger developer, adding, if necessary, considerable more pyro, he would have had detail which would have borne intensification afterwards, and thus obtained a good picture.

MR. BEACH—Mr. Ripley, how long does it take to develop an under-exposed plate on your plan, do you suppose?

MR. RIPLEY—Well, if you want to make pictures out of under-exposed plates, the time must not be a consideration. If you expect to hurry a thing of that sort, and then get good results, you will be disappointed; at least such has been my experience. I do not always confine myself to one plate.

MR. BEACH—Mr. Newton, can you advise the society in regard to bringing out the details in a dark shadow, as intimated by Mr. Cook?

MR. NEWTON—I do not know that I can give them anything more than what is generally known. I should commence with a smaller quantity than the ordinary quantity of pyro. That would be the most difference that I would make in starting the developer, so as not to get the "high lights" too strong, and gradually increase it until I obtained the proper ratio. The way I develop an under-exposed plate is to put it in the waste basket. (Laughter.)

MR. RIPLEY—It is my experience that pyro alone, without being accompanied by the use of the restrainers, does not very materially add density. I have used, for the purpose of experiment, as much as 20 grains of pyro to the ounce without getting undue density.

MR. ROOSEVELT—I would like to ask Mr. Ripley whether bromide has the same effect as the increase of pyro, or whether the use of the pyro is better than the increase of bromide.

MR. RIPLEY—It is hard to lay down a "hard and fast" rule, because there are no two men that can develop a plate in the same way. I myself prefer a large dose of pyro as a restrainer, instead of bromide. Bromide seems to have the effect of choking and stopping, beyond recovery, the development of a plate. You can put bromide enough in the solution to destroy the images. The citrates are not as powerful restrainers; they are more retarders. I know if you have a greatly over-exposed plate, a good dose of citrate of soda or ammonia will stop the development; but by washing off the plate, you can go ahead and get a new image, but with the bromide you cannot. Pyro will answer unless you have a very much over-exposed plate. I personally like best as a restrainer the bromide in conjunction with the pyro. That seems to give density to a plate that has any exposure at all. You can work on and on safely as long as the plate don't run into a green fog, which sometimes occurs.

MR. BEACH—It appears to me that the latest opinion in regard to the development of under-exposed plates is, as the evidence appears to be, to commence with a weaker development (which is the same when you dilute a normal developer with a large amount of water) and wait until the image gets out partly, and then increase the amount of alkali. This fact is borne out by the testimony of the amateurs on the other side of the water, in the recent paper of Mr. T. R. Copley, read before the Manchester Photographic Society, on the subject of "The Development of Rapidly Exposed Plates," reported in the *British Journal of Photography*.

MR. BEACH—In a recent address of its new president, Mr. P. H. Phillips, of the Liverpool Amateur Photographic Association, he recommended the two-solution plan of developing, and speaks highly of the potash developer. The latter he thinks gives better effects in bringing out details with greater ease, and in imparting a good color to the negative. Mr. Atkins found ammonia injured his health, and secured excellent results with the American ferricyanide developer. It is my experience also that it is a good plan to commence with a diluted developer, and then increase it to a greater strength to bring out the details, but the first important point is to start the image slowly.

Mr. LOW—How long a time, Mr. President, do you personally believe is required to develop an under-exposed plate?

Mr. BEACH—Generally, I think, fifteen or twenty minutes, but I often like to get through sooner if I can, for unless it is a subject I am particular about, I have not the patience to wait longer, and I think that is the case with a great many of our members. The course that I pursued in one case, where I had ten or eleven plates to develop, all having had the same instantaneous exposure, was first to find out the right strength of the developer, and then, when I developed one or two plates, and ascertained accurately what the strength of the developer was, I found that it was not necessary to start with a weak developer, but simply to put on the right strength and bring out the picture. I suppose it took from ten to fifteen minutes for each plate. One of the plates was so much under-exposed, that I thought I would experiment by adding small amounts of the alkali every two minutes until there was an abundant quantity of it in the developer. At this stage the film fogged over with a chemical or developer fog, and the plate was useless. This convinced me that you cannot add the alkali beyond a certain limit without spoiling the plate. Latterly the general practice appears to be to start with a normal developer well diluted with water, and after the details are fairly brought out, then increase the alkali to any desired strength.

Mr. LOW—You mean to start it for some moments?

Mr. BEACH—Yes, sir; to start it for some moments. The evidence appears to be that you want to develop until the large majority of the detail and the high lights appear to be pretty well up with this weak solution, and then to increase the alkali so as to hasten the development. In that way you keep the high lights from getting too dense in proportion to the shadows.

Dr. PIFFARD—I want to ask this question: When you have once used your developer, and put it by to use again, of course it is not identical in all respects as it was when it was first made and used. Now, which of the two chief ingredients, the pyro or the alkali, is it that deteriorates most?

Mr. BEACH.—The alkali seems to make the pyro deteriorate.

Dr. PIFFARD—It is the pyro that deteriorates?

Mr. BEACH—Yes, sir.

(To be continued.)

## What Our Friends Would Like to Know.

*N.B.—We cannot undertake to answer communications of a technical character except through the columns of the BULLETIN. Correspondents will please remember.*

Q.—W. H. B. writes:—Which is the best developer for a beginner in photography, pyro and alkali or ferrous oxalate? I have not had any experience whatever, and would like to begin with something simple and easily managed.

A.—Ferrous oxalate is certainly the simplest to use when you do not make instantaneous exposures. For instantaneous work you will probably have to use pyro and alkali. The formula for the ferrous oxalate developer is given in "How to Make Photographs," issued by our publishers, page 70.

J. G. D. writes:—The N. P. A. paper I have used for a number of years and expect to continue to do so. One lot of it, which was extra glossy, and made splendid prints, gave me a great deal of trouble with blisters, as they were numerous and resisted all the usual methods of treatment. I overcame this trouble at last, and used the paper, by giving the toned prints a bath in half water and half extra refined wood alcohol, letting them lie in it a few minutes before fixing; after fixing I used the usual salt bath. This treatment did not seem to injure the prints, and if any paper will blister after this dose I'll give it up.

Q.—T. S. W. sends several prints that have plenty of detail but have a leaden tone, and writes:—Please tell me what is the trouble with these prints; I followed the directions given in the formula for printing with sensitized paper and I always get this result.

A. Your prints are evidently over-toned. This can happen in two ways; either the gold solution is too strong, or you have heated it to too high a temperature, probably the latter. Try again and make your prints very dark before you take them from the printing frame, This will give you more latitude in toning and will also improve the prints; those you send being a little weak in places.

Q.—F. C. M. writes:—I would like to ascertain through the columns of the BULLETIN: 1st, The distinctive peculiarities of the Beck Autographic Lens; 2d, Dallmeyer's Rapid Rectilinear Lens; 3d, The Suter Lens.

A.—Of the three lenses mentioned, we have

only had experience with the Dallmeyer. Of this latter lens we can say that it is all that it claims to be. It is absolutely rectilinear, admits a marvelous amount of light, and gives us pictures that are so superior to every other lens that we have used, that we consider it the best lens made. The fact that there is scarcely a photographer of importance in the world that does not own one or more of these lenses, speaks more than any words of ours as to their good qualities.

Q.—C. & B. write:—Will you please inform us through the columns of the BULLETIN how to get a blue or gray tone on prints?

A.—A blue tone can be obtained by making the usual toning bath with bicarbonate of soda and then adding to it *a few drops* of a solution of bleaching powder. The bleaching powder solution is made by adding a teaspoonful of good powder to a pint of water, thoroughly shaking and allowing the insoluble part to settle.

## Views Caught with the Drop Shutter.

GEORGE R. ANGELL, the photographic merchant, of Detroit, Michigan, will remove to 216 Woodward avenue in the same city, about May 1st. He offers a prize to Michigan photographers who exhibit at the St. Louis Convention. We shall give the conditions in the next issue of the BULLETIN.

PAUL & SHAPE, of Milwaukee, will occupy on May 1st, large new quarters, at 227 Grand

avenue. They will have one of the most extensive displays of photographic apparatus and materials in the Northwest.

MR. CHADWICK, of the Manchester Photographic Society, England, gave us a pleasant call recently. Mr. Chadwick is well known from his writings on the magic lantern.

H. A. HYATT, of St. Louis, Mo., sends us a large and handsome catalogue of his photographic stock. These Western gentlemen each seem to be endeavoring to excel in fine catalogues, and our friend Hyatt is certainly not behind any other of our Western friends. The catalogue is finely printed, and handsomely illustrated, making it a useful book of reference.

MESSRS. SHEEN & SIMPKINSON, of Cincinnati, have enlarged their premises to double the former capacity. They have a fine light and commodious store, unsurpassed in that section, occupying four large floors, and propose to do a large business in photographic supplies.

G. H. NORTON, formerly of Cobbs, Binghamton, N. Y., has bought the Stanton Gallery at Amsterdam, N. Y.

RAY D. CHAPMAN, of New York, has opened a new studio at Amsterdam, N. Y.

C. W. KENNEDY, Amsterdam, N. Y., has opened a fine new studio on Main street.

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NEGATIVES MADE ON THE STARKLY PLAT  
WITH PLATSCOPE LENS  
PRINTED ON THE CELEBRATED N. P. A.  
PENSE ALBUMEN PAPER

**A Mosaic**

By W. H. D. D.

PRINTED BY

*Album*

# ANTHONY'S Photographic Bulletin.

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Prof. CHARLES F. CHANDLER, Ph.D., LL.D., *Editor*.

ARTHUR H. ELLIOTT, Ph.D., F.C.S., *Associate Editor*.

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MAY 8, 1886.

Vol. XVII.—No. 9.

## THE COMING CONVENTION.

THE interest that is being shown in the proceedings of the Photographers' Association of America, at St. Louis, has compelled us to issue a Supplement devoted to the many communications of importance that we are receiving. To do this, our publishers have generously given us space usually devoted to advertising, and we are thus able to give our readers the full quota of photographic papers and reports in the regular pages.

From all sides we hear of the preparations for the great meeting in the city of St. Louis. We have already received several exhibits from Germany in answer to our solicitations on behalf of the association, and more are expected daily. We did our best to stir up our brothers across the Atlantic, and from the report, and notices we see in the various journals in Germany, we feel satisfied that our efforts have not been in vain. Almost every society in Germany and Austria has been notified of the meeting and exhibition in St. Louis, and many encouraging comments from the presiding officers of the various societies have been made and published.

In the matter of papers also, we hear of some from those high in the ranks of the science of photography in the German Empire. Altogether, we expect such a meeting in St. Louis as has never been seen before, and will be hard to surpass in the future. It appears as if our Western brethren have left no stone unturned to make the meeting a grand success. The amount of energy displayed, and the large expenditure of money, in the shape of medals and other prizes, should call forth such a concourse of photographers as has never before been seen together; and we do not doubt but that the assembly will be the best representation of America's photographic artists that has ever yet been called together.

To those who are hesitating in the matter, whether they will go or not, we most earnestly say : Go by all means. If you have never been to such a convention before, then you cannot possibly tell how much you lose ; how many objects of interest you have missed seeing that would assist you in your professional career; how many little ideas exhibited in the work of the leaders in the profession that would add materially to the quality of your productions, and give you a chance to demand better remuneration than you now receive.

To those who have been to former conventions, and think they can miss this one, we say : Don't do it. You will, perhaps, never have the chance to go again, and if it is possible to go this time, don't fail to take the opportunity. Read what President Potter says in our Supplement.



To all who go we can insure a most hearty welcome, professionally as well as socially. We know from experience the kindly feelings of our St. Louis friends, and although some years have passed since we tasted of their hospitality, the memory of the good time we spent there still remains as fresh as if it was yesterday. We hope nothing will intervene to prevent our being present at this photographic feast of reason. Our last words to all now is: Go to St. Louis in June, and send an exhibit to compete for a prize. If you don't you will regret it for the balance of your days.

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#### EDITORIAL NOTES.


THE world of invention moves rapidly, and photography is receiving its full share of consideration. It has been known for some time that when light was allowed to fall upon selenium it changed its power of conducting electricity. Experiments with a view to using this in transmitting photographs by electricity have been carried on by Dr. Gemmill, a physician and amateur photographer, at Drummore, in Ireland, and he has patented his methods. The details of the process we have not yet learned.

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WE regret to note the death of Mr. Joseph W. Bates, for seven years the President of the Photographic Society of Philadelphia. He was an enthusiastic photographer, always ready to lend a helping hand to those in difficulty, and his genial presence is a great loss to our Philadelphia brethren.

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THE lucky member of the Society of Amateur Photographers of New York, whose picture has been selected for the "Presentation Print," is Mr. James F. Cowee, whose picture of a surf scene was selected as the best in the collection, photographically and artistically. The judges were Theodore Gubelman, the well-known photographer, and F. Rondel, the artist. The mark of Mr. Cowee

upon the plates sent in was  and we noted a large number of very fine prints with this sign, which received many laudatory comments from those who saw them.

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MR. W. B. TYLER, the modest Secretary of the Pacific Coast Amateur Photographic Association, sends us an excellent report of the exhibition held in San Francisco, for which we are greatly indebted to him. He does not tell us what pictures he showed, but we have reports from elsewhere, and hear that he exhibited "some capital instantaneous photographs, including views of China-town, vessels in the bay, and some lovely views of Boulder Creek." He also showed many detective camera pictures, and a view of the ballet in Undine during the progress of the play. Altogether Mr. Tyler did himself great credit, and we are glad we have found him out, for "some of his pictures are really works of art."

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WE have received the Constitution and By-Laws of the Secret Order of Scientific Photographers. This is an organization of Minneapolis photographers for the purpose of "advancing the art of photography and elevating the professional character of its professors." We wish the order every possible success, and hope that its efforts will bear good results in the future.

MR. JOHN E. DUMONT, the well-known amateur photographer, of Rochester, received a bronze medal in the "Home Portraiture Competition" offered by the *Amateur Photographer*, of London. We must congratulate Mr. Dumont on his success; although we could hardly expect him not to carry off a prize in any competition.

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PROFESSOR E. C. PICKERING, Director of Harvard Observatory, has received a gold medal from the Royal Astronomical Society of England. This is a tribute to American science from our English cousins, and the man that receives it well deserves the honor.

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WE have before us a copy of *The Journal of Science and Art*, which is published in Cleveland, and contains a picture of our good friend J. F. Ryder, and an excellent account of his life. He was born in Ithaca, N. Y., in 1826, and began making daguerreotypes there in 1848. He finally settled in Cleveland, O., in 1852, where he has made his influence felt from his artistic tastes. Of his gallery it is said: "It has become a public educator and a constant source of enjoyment to the masses." Such men as Mr. Ryder always elevate our art, and the world at large is better for the lives they lead.

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### THE MAGIC LANTERN AND ITS APPLICATIONS.

BY L. H. LAUDY, PH.D.

(Continued.)

#### ATTACHMENTS FOR POLARIZED LIGHT.

LIGHT which has been refracted from certain surfaces, or transmitted through certain substances under certain special conditions, assumes new properties, and is no longer reflected, refracted or transmitted, as is ordinary light. This change in the action of light is called polarization, and rays thus modified are said to be polarized. This phenomenon was discovered in 1808 by Malus, a young engineering officer of Paris.

According to the undulatory theory, a ray of common light contains vibrations in all planes passing through the ray. In polarized light the vibrations are reduced to one plane only. The term polarized, as applied to light, is an unfortunate one, but it is too firmly engrafted upon science to be changed for a better name, and we are still obliged to use it. It originated from the analogy of two ends of a magnet, which consist of poles; and as the beam of light was said to have sides and ends, it was called polarized. Strictly and scientifically speaking, it is light vibrating in one plane.

There are four principal methods by means of which a beam of light may be polarized: they are, *reflection, ordinary refraction, double refraction, and absorption*. Two of these methods only can be used practically for purposes of projection with the lantern: they are double refraction and ordinary reflection. Any instrument used to polarize light is called a polarizer, and the instrument to examine the light polarized is called an analyzer, and either may be used to polarize or analyze. A large number of crystals possess the property of double refraction—that is, a ray of light in passing through a double refracting crystal is divided into two rays—hence an object seen through one of these crystals appears double

(Fig. 36). Such a crystal possessing this property to a high degree is Iceland spar, and if we look at a dot or letter or line, a double image will be perceived, as two dots, two letters, two lines, etc. Now, the light in passing through is divided into two rays, one of which is called the ordinary, the other the extraor-

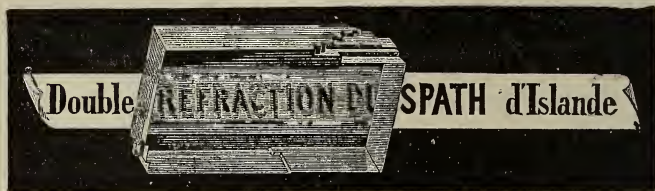


FIG. 36.

inary ray, and both are polarized. The ordinary image will seem slightly nearer to the eye than the extraordinary, and if the crystal be turned round, the ordinary image will continue fixed, and the extraordinary will describe a circle around it.

The objection to the use of a natural rhombohedron of Iceland spar, is that it gives two rays, one of which must be suppressed. This was most perfectly accomplished by the invention of the Nicol prism, which is made by cutting a rhomb of Iceland spar along a diagonal plane, and then cementing the two pieces together in their natural position by Canada balsam, whose refractive index is intermediate between the ordinary and extraordinary indices of the crystal. A ray of common light suffers double refraction on entering the prism, but the ordinary ray is totally reflected on meeting the first surface of the balsam, and is thrown to one side, while the extraordinary ray passes through the balsam, and emerges at the end of the prism parallel to the original ray (Fig. 37). The lateral faces of this compound prism are all painted black, leaving only the terminal faces for the transmission of the light. The ordinary ray suffers total reflection, and is absorbed by the blackened side of the prism.



FIG. 37.

The Nicol prism is the most valuable means of polarizing light; yet, while it more perfectly polarizes the light than the bundle of glass plates, it produces a small beam or circle, which is not governed by the distance of the lantern from the screen, but by the size of the prism. To secure total reflection of one ray, its length must be considerably greater than its breadth, and this necessarily limits the divergence of the transmitted beam; yet by its use you get a colorless pencil of light, perfectly polarized, from 20 to 27 degrees in breadth.

With the use of the Nicol prism as the polarizer, the lantern is parallel with the screen, which has some advantages.

Large pieces of Iceland spar are scarce and very difficult to obtain, and for this reason other methods are used to polarize the light; and next to the Nicol prism in efficiency is the Foucault prism, which differs from the former in employing a film of air instead of Canada balsam, and the two halves of the prism being about one-third as long as the Nicol. The objections to its use is that it has a less angular field, and the light used must be parallel, while there is a large loss of light by two reflections. (Fig. 38.)



The third method is by means of single reflection with a bundle of glass plates set at an angle of 56 degrees, that being the angle of polarization for glass. (Fig. 39.) The plates of glass used should be about one-twentieth of an inch thick, fifteen to twenty in number, of good quality, and about 5 x 8, or large

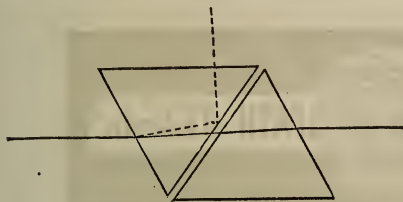


FIG. 38.

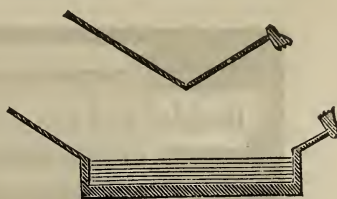


FIG. 39.

enough to receive the full beam of parallel light from the condensers. The plates are mounted in a metal frame or elbow, which is firmly attached to the front of the lantern. Fastened to the front of the elbow, or on a separate stand, is placed a plano-convex lens and a small Nicol prism about three-quarters of an inch across its longest diagonal. A smaller one can be used, such as comes with the microscope, and will yield fairly good results. The Nicol, thus termed for the sake of brevity, must be so mounted in front of the lens, and be so placed in the focus, that all possible light may pass through it; and by fitting it into a collar it can be rotated. (Fig 40 N.)

The great advantage of using the bundle of plates, is that it gives a beam of light the size of which depends upon the distance from the screen, the same as in ordinary lantern projections, and the cost of the apparatus is much less than with the use of two Nicol's.

The objection to the use of the bundle of plates is, that as the lantern must be turned at an angle, a large amount of light is lost by absorption; only one-half that is used is reflected, and this in passing through the analyzer is reduced to about 15 per cent. of the original light.

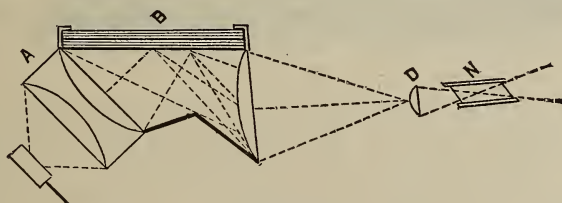


FIG. 40.

When using either of these attachments, it is important that the light should be carefully adjusted and made to yield the greatest possible illumination. The plates must be perfectly clean and dry and the outside glass should be covered with black cloth or varnish. The experiments are of the most fascinating character. Many of the objects are prepared from mica or selenite (sulphate of lime), which is an easily procurable crystal, readily cleavable into thin laminae capable of showing the colors of polarized light, and is most frequently employed in experiments on chromatic polarization.

Making use of the principle that the color produced depends upon the thickness of the plate, selenites have been cut of suitable shapes and thicknesses so as to produce colored images of stars, flowers, butterflies and other objects, which

appear transparent to the eye, but yield the most gorgeous and indescribable display of complementary colors as the analyzer is made to revolve.

If the object or films be rotated while the polarizer and analyzer remain fixed, the color will appear at every quadrant of revolution and disappear at intermediate positions. When the Nicol is rotated, the colors will change to the complementary at every quadrant; that is the same color will be seen in positions of the analyzers differing 180 degrees, and the complementary will be seen at 90 and 270 degrees.

These methods yield plain polarized light. There are two other forms, elliptical and circular, each of which require additional apparatus, such as a quarter-wave plate or two Fresnel's rhombs, for a full description of which the reader is referred to "Ganot's Physics;" "Daguin's Traite de Physique;" "Jamin's Physique;" "Polarized Light," by William Spottiswoode, F. R. S.; "Brewster's Optics;" Pereira's "Lectures on Polarized Light;" Lewis Wright's "Light."

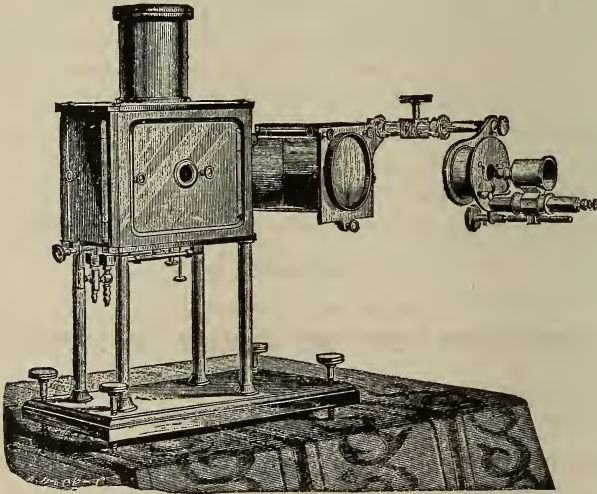


FIG. 41.

When projecting the larger objects, they occupy the same position in the lantern as the ordinary slide, but by far the larger number of objects are those used with the table microscope, and to project these requires the microscope attachment, which has already been described. It is placed in front of the elbow and the Nicol is placed in front of the objective. The entire apparatus is shown in Fig. 41. With this combination it is possible to project many beautiful and highly interesting objects and study them on a large scale.

The large objects best suited, besides the designs already mentioned, are—

- |                     |            |                       |                    |
|---------------------|------------|-----------------------|--------------------|
| Plates of selenite, | giving     | tints                 | red and green.     |
| "                   | "          | "                     | " yellow and blue. |
| "                   | mica,      | tints                 | red and green.     |
| "                   | "          | "                     | yellow and blue.   |
| "                   | quartz cut | parallel to the axis, | thin.              |
| "                   | "          | "                     | thick.             |
| "                   | "          | oblique,              | giving hyperbolas. |

## CONCLUDING REMARKS.

No better gift, whether the toy lantern or the more perfect instrument, can be selected, for it is certain to please, is well qualified to convey instruction with the most gratifying results, and it can be applied to a variety of useful, instructive, and eminently attractive purposes. With the aid of photography, geography, and allied sciences, natural history and extended travel to all parts of the earth can be enjoyed without expense and fatigue, and with a degree of accuracy unknown till their introduction; and to its utility in this direction no limits can be assigned. Need more be said in its favor? I think not; for it will commend itself to every careful and thoughtful mind, and it is to be hoped that its introduction may be more general in the household, where it will be looked upon with the same importance as is a library for imparting useful knowledge.

In a treatise such as this, it is impossible to enlarge upon all that has been done in advancing to the degree of perfection in which we find the lantern to-day. My object has been to give a simple and in some cases brief description of each lantern, and in so doing to call attention to the most important points in connection with their history and application. Much has of necessity been omitted for want of space and time, but I hope that what has been written may lead to a better understanding, awaken an interest in many of my readers, and meet with a kind reception at their hands. Having now completed my task, I take this opportunity to express my thanks to Dr. Elliott for his patience and valuable assistance rendered me in this article; and my thanks are also due to the publishers for the great care which they have bestowed upon the illustrations.

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[From our Special Correspondent.]

## PHOTOGRAPHIC NEWS FROM GERMANY AND AUSTRIA.

*What is Cyanin and Erythrosin?—Obernetter's Observations with Azalin—Importance of Optical Sensitizers—Action of Developers on Dry Plates.*

In your valuable issue of March 13th, you have answered the question: What is Cyanin? About the same time I wrote to you, that cyanin had been put aside for other dyes. Now another question arises: What is Erythrosin? The answer is: Erythrosin is just as little new in photography as cyanin. The last named matter has already been tested by Dr. Vogel, in 1875, upon bromide of silver collodion, and he discovered that it makes the bromide of silver extremely sensitive to orange, so that the sensitiveness for orange is even stronger than that for blue. Nine years later, Dr. Vogel proved the same action of cyanin upon gelatine plates. (*Photogr. Mittheilungen*, xxi, page 10.) Later on, Schumann experimented with the same substance. The defects of the cyanin upon gelatine plates are, that it has a tendency to very easily cause fog, and that most of the plates prepared with it will soon spoil, so that it can be used only for a few emulsions of a low sensitiveness. This defect is not shown by the erythrosin. This body is completely analogous to eosin. Eosin is the potassium salt of tetra-bromo-fluorescëin; erythrosin is the potassium salt of tetra-iodo-fluorescëin. Both are produced by the action of iodine or bromine upon fluorescëin. The constitution of the bodies and their formulæ are almost identical. Eosin,  $C_{20}H_6Br_4O_5K_2$ , is more easily dissolved in alcohol (1 part of eosin in 400 parts), while erythrosin,  $C_{20}H_6I_4O_5K_2$ , requires 1,000 parts of alcohol for solution.



Both bodies strongly absorb the yellow-green light, and are therefore strongly green sensitive. But the absorption band of the erythrosin lays further towards the yellow, wherefore it gives greater yellow sensitiveness.

The red sensitiveness of the body is unfortunately very inferior. If red coloring matter is to be used, azalin will surpass them all. Mr. Obernetter has made some interesting communications about the latter, which, by permission of the author, I will here reproduce. Mr. Obernetter writes that for some time he has made his views of colored objects with wet azalin plates, freshly prepared by him, so that he does not require to keep them in stock. He dissolves 1 c.c. azalin in 100 c.c. of water, adds 1 c.c. ammonia, and bathes an ordinary emulsion plate in the same for one minute. These plates are not dried, but exposed in a moist condition. Thus plates are obtained which are just as sensitive as the original emulsion. Azalin plates, as they are purchased from the dealer, may also be taken, immersed in water and then exposed. The result is a much higher degree of sensitiveness. These experiments are best made with Obernetter plates, because they contain very little gelatine. In richly gelatinized plates bubbles will easily form, which will only disappear after drying.

It is remarkable how, after these investigations, the optical sensitizers gain importance day by day in modern photography, while the chemical sensitizers, once so indispensable, viz.: nitrate of silver, pyro, tannin, etc., are losing in importance as sensitizers. New artificial coloring matters are now discovered daily, of which a good many are optical sensitizers. Eder has come to the front with naphthal blue, and soon we will hear of others. It is peculiar that other parts of photography, for instance, the development, have met with very little attention lately. Oxalate of iron, pyro, and perhaps hydrochinone, is about all that are employed now, though Mr. Carey Lea proposed nine years ago a great many other developers, the alkaline or chemical, for instance, succinate of iron, æsculin, daphnin, quercitrin, guaicum, ammonio-protioxide of copper, etc.

I cannot help pointing to the remarkable fact, discovered by Dr. Vogel, that our physical developers, that is our acid developers, act on gelatine dry plates, but that the sensitiveness of the gelatine plates in acid development is not greater than that of the old collodion dry plates. It is known that the latter are also more sensitive with the alkaline developer than with the acid developer, but the difference is not very great. It can be said that, with them, the alkaline development is twice as sensitive as the acid development, while with gelatine plates the alkaline development gives a twenty times higher sensitiveness than the acid one. The difference between the bromide of silver of the gelatine plates and the bromide of silver of the collodion plates shows nowhere so strikingly as here.

HELIOS, *Dresden.*

*(To be continued.)*

I HAVE been taking the BULLETIN only six months, but the information I have already gotten from its pages has benefited me many times the amount of a year's subscription.

C. A. R. GAYLORD.

*All communications for the columns of the BULLETIN should reach us on Monday preceding the day of issue, to insure their publication at that time.*

## SCHUMANN ON ERYTHROSIN.

LEIPZIG, April 12, 1886.

*To the Editors of ANTHONY'S BULLETIN.*

IN No. 6 of your valuable journal you publish an article, "Photographic News from Germany and Austria." The writer therein asserts that the erythrosin plates (Scolik's) possess a remarkable "orange" sensitiveness.

I have been occupied during the last few days with erythrosin plates, and by reason of my spectrographic researches, I can assure you that these plates have quite an excellent sensitiveness for yellow (spectrum district D E), but that they have not the least sensitiveness for orange.

Messrs. Mallmann and Scolik, in Vienna, to whom we are indebted for this new orthochromatic plate, have never claimed that it is excitable for spectrum orange.

My experiments with erythrosin have confirmed the declarations of Messrs. Mallmann and Scolik completely. The plates work clear, intense, and are highly sensitive. Compared with methyl-erythrin, erythrosin will do two and one-half times as much. The yellow maximum—which lays between D and E—was in one second just as intense upon erythrosin plates as upon methyl-erythrin plates in  $2\frac{1}{2}$  seconds. The emulsion for these experiments was pure bromide of silver gelatine, made after Professor Eder's ammonio-oxide of silver method.

I have to remark here, that according to my observations so far, methyl-erythrin sensitizes better for yellow than iodo-eosin.

This circumstance will place the high value of the erythrosin for orthochromatic photography in the proper light.

But it should be remembered that this sensitizer acts excellently only when applied in the shape of a plate bath. If the ready-made emulsion is colored, the plates will turn out much less sensitive.

About the preservative quality of the plates I am not yet prepared to pass a judgment. But it seems to me, according to my last observations, as if those emulsions prepared with ammonia could not stand an ammoniacal bath without the formation of fog when kept for some time. The cooked emulsion is anyhow more suitable for the erythrosin ammonia bath than the ammonia emulsion.

No matter how excellent the erythrosin plate is for orthochromatic views, it will, on account of its total insensibility to orange and red, give less good effects where it is in contact with these rays.

If you take an object whose color is as near as possible to the orange of the spectrum, or take the spectrum itself—that of the sun, or of an artificial light—you will find no coloring matter which offers so many advantages for scientific, as well as for practical photography, as cyanin, if added to the pure bromo-gelatine by an ammoniacal bath.

There is still only one coloring matter which in this regard is nearly related to the cyanin, the azalin. But the orange sensitiveness of azalin is smaller than that of the cyanin. In the course of this year I may yet have an opportunity to give you unmistakable proof of this. At such time I shall place before you a set of cyanin bath plates, which, while equal to my present plates, will have no fog.

With reference to this, I can inform you that during last week I have taken the solar spectrum repeatedly upon freshly-prepared cyanin-bath plates, and obtained crystal-clear plates. If the developer is taken so strong that even a

highly sensitive plate will fog, and if with potassic pyro no potassic bromide is used, then, of course, the cyanin-bath plate will be covered so as to be useless. But this weakness is not a special peculiarity, as all highly sensitive plates have the same.

By reason of my repeated experiments with cyanin, I have to sustain all that I have said in the *Photographische Wochenblatt*. My cyanin observations may raise the same claim to reliability as my photo-chemical researches on the iodide of silver. When I published the latter I was accused repeatedly by different parties of not being reliable. To-day the opinion about the value of the silver iodide for the modern dry plate has changed from the time that I published my *dilettanti* results after experimenting for two years, and among those who keep quiet now are men with high-sounding names, who at that time, with their whole authority, asserted the contrary of what my iodide of silver experiments had demonstrated, and which is now recognized from all sides.

Respectfully,

V. SCHUMANN.

### PHOTOGRAPHIC EXPERIENCES IN FLORIDA.

BY MARCUS H. ROGERS.

IN organizing a party and outfit for a camping and cruising trip down the Indian River the past winter, our party may be said to have embraced two ladies, two cameras and three gentlemen. As the *BULLETIN* is chiefly concerned with matters pertaining to photography, other experiences must be ignored, however interesting they may have been. We chartered a boat, and in cruising down the river we landed at a wharf, where there was a store, below St. Lucie, and found near by a camp with four Indians—two males and two squaws—of the Seminole tribe. One old man, brother of the late chief Tuskanooaga, had a face showing a good deal of dignity of character, while the other male was a young man, son of the late chief, and not very prepossessing in appearance. Of course I wanted to make a negative of them, but they quietly and persistently declined the honor. I offered money—a shake of the head was the sullen response. An hour after, a boy came and told me the Indians were in their camp, and I could probably take them. I might have done so with a detective camera, but while getting my outfit ready, I saw the young Indian reaching for his gun in a suspicious manner, and as the boy said “he looked like as he was going to shoot,” I concluded it would be an unequal battle to “shoot” at him with only a camera, so I turned my back upon the Indians and began pointing out to my companion, the boy, the beauties of the landscape in the opposite direction. After a little make-believe of this sort, I quietly folded my tripod and stole silently away. But after parleying for half a day, I finally managed to get a shot at them without getting shot in return, though the squaws deliberately turned their backs to the camera.

One day we shot a ten-foot alligator, and immortalized him, photographically speaking, by taking his picture in all sorts of positions. One represents him with a strap around his neck and a cord attached, the cord being held by the young lady of the party, who was equal to the emergency and dressed up, with bonnet, gloves and parasol, and is apparently taking the ‘gator out for a little exercise. The picture will be called “The Florida Poodle.”

I have made proofs of all the plates that I have developed, by printing upon



ready sensitized paper, washing pretty thoroughly, then fixing in hypo, without toning and washing afterwards. The prints are quite red at first, but, after a week or two most of them assume a very good tone, not unlike that resulting from the gold toning bath. Prints from a hard negative look quite as well as if they had been toned.

The old fort at St. Augustin is an ancient work that tempts the amateur photographer. I went up there, set up my camera, made an exposure, and just then saw a soldier walking towards me, who inquired if I had permission from the Secretary of War to photograph the fort. As I replied no, he said I could not take a picture; but I did not tell him that I had already got one safely inclosed in my little box. He said he had driven ten persons with cameras away from the fort the day previously. What absolute nonsense, when the fort is simply an old curiosity, and photographs of every nook and corner of it are for sale in all the shops in the town. The rule against allowing photographs to be taken of forts may be all right in general, but in this case it seems simply ridiculous, and the Secretary of War ought to modify it.

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### A COMPARATIVE PHOTOMETER.

BY HENRY G. PIFFARD, M.D.

It consists in the use of the Warnerke or Anthony sensitometer plate. Placing the plate in front of the lantern condenser, the image is projected on the screen, and the more intense the light the greater the number of figures that are revealed. By this means, the intensity of the light from different lanterns may be readily compared; likewise the varying intensities from the same lantern when placed at different distances from the screen. Bearing in mind the law that the intensity of the light varies inversely with the square of the distance, the relative values of the numbers can be easily determined. The practical application of this in the matter of enlargements on bromide paper will be readily perceived. Having ascertained the proper printing time on a given emulsion for a given size of enlargement, note the sensitometer number. The next time you enlarge, test your light with the plate, and, knowing the relative value of the numbers, calculate your time. If you wish to vary the degree of enlargement, test the light and calculate the time as before.

For use in this connection, I would suggest that the sensitometer plate be made the size of an ordinary lantern slide, and that the relative light value of different numbers be determined in advance, and a copy of them furnished with each plate. This smaller plate might be called a *comparison photometer*. Other applications of the instrument will readily suggest themselves, as the determination of the comparative "rapidity" of different lenses, etc.

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A DAMSEL beset for a photograph,  
 By a vapid youth of genus calf,  
 Agreed at last the boon to grant,  
 To the great delight of the gay gallant.  
 "Oh, thanks!" said he, "I some time shall  
 Plead for the fair original!"  
 And roguishly shaking her dainty head,  
 "I'll give you the negative, then," she said.

## EXHIBITION OF THE PACIFIC COAST AMATEUR PHOTOGRAPHIC ASSOCIATION.

By W. B. TYLER, *Corresponding Secretary of the Society.*

AFTER many delays our exhibition has opened and closed. It was a success—a perfect success. The Art Association kindly offered the use of their rooms, an offer which, it is needless to say, was gladly accepted. Never were photographs exhibited under more favorable circumstances. The large exhibition room is about fifty feet square, and lighted by eleven sky-lights. Off this is a smaller room, about twenty feet square and lighted in the same manner. At night the light is equally good; a row of gas jets around both rooms, and a system of reflectors, illuminating every square foot of space. The walls are finished with a dado of hard-wood two and a half feet high, and above this, space for hanging pictures six feet high and covered with dark maroon cloth. Off the exhibition rooms is a lofty hall, fifty by seventy feet, with a large stage. This hall seats eight hundred people, and was used for lectures and lantern entertainments.

The exhibition remained open from April 6th to April 10th, inclusive. On the opening night the rooms were packed. At half-past eight o'clock the audience assembled in the large hall and the exhibition was formally opened by Mr. Tyler, who gave a half-hour lecture on photography. The lights were then turned down, and Messrs. Runyon and Lowden threw upon the screen a large number of slides (a hundred and fifty in all) made by the different members. The oxy-hydrogen light was used with a twelve-foot disk. Messrs. Lowden, Gibbs, Oliver, Davis, Brooks, Woods, Tashiera, and Smith were the largest contributors of slides. On Wednesday evening, April 7th, the same programme was repeated, while the rest of the week the rooms remained open from 9 A.M. to 6 P.M.

It is impossible to calculate how many persons attended the exhibition, as no admission fee was charged and the rooms were practically thrown open to the public, except upon the two invitation nights, but it is safe to say that eight or ten thousand people visited the rooms during the week. There were 1,100 prints upon the walls, which is the biggest showing that photography has ever made in a non-competitive exhibition. Twenty-six members contributed prints, and all the pictures on the walls were the work of members of the association, with the exception of two or three old and rare prints which will be hereafter noticed. Most of the prints were double mounted, and, owing to the dark-maroon background, light colored mounts were generally used. The hanging committee performed their work judiciously and the prints were tastefully arranged. To give a full description of the different prints would be an impossibility. The following is a synopsis of the most notable work.

Mr. W. H. Lowden exhibited a large collection of landscape and instantaneous views, mostly whole-plate size and mounted on large light green or tea-colored panels. His work is so uniformly excellent that one would like to describe the whole collection. His best picture, "A Dusty Road," has been reproduced so often that a description is not necessary. So also with his touching tale, in two chapters: Chapter 1, "I boke my Horse;" Chapter 2, "Papa, fix him." A picture of "A Balloon above the Clouds" is very striking, and was a puzzle to those unacquainted with the art of double printing. "After the Storm," "The Golden Gate," "Country Pastimes," "Adrift," and "Feeding the Chickens" are also gems. Mr. Lowden has a large and fine collection of

cloud negatives which he uses with great skill and taste. Perhaps the most wonderful picture shown by Mr Lowden, however, is a print of the moon. The negative of this print was made at the eye-piece of a ten-inch reflecting telescope, and measures five inches in diameter.

Mr. W. C. Gibbs made a large exhibit, mostly from whole-plate negatives. The prints were all double mounted on large panels, light green and primrose being the colors mostly used. A series of six hunting scenes in the tules were wonderful specimens of instantaneous work. These were made in the middle of winter, yet they are chock-full of detail. They are toned to a rich velvet black which suits the subject perfectly. Another print which attracted much attention is a night-blooming cereus, natural size, and taken by the light of an oil lamp, at night, because, as was explained, that is the only time of day that the creature blooms. "Firing a Harpoon Gun" shows the track of the rope plainly. Several prints of Chinese junks and hay schooners are very good and full of detail.

Harry L. Jones contributed some fifty or sixty quarter-plate instantaneous views, mostly of marine subjects. These were uniformly good, and nicely toned, printed and mounted.

Mr. E. L. Woods' collection attracted more notice than any other prints on the walls, and this fact shows that the public have a higher artistic sense and appreciation of the beautiful than they are generally given credit for. Mr. Woods exhibited about twenty 4 x 5 platinum prints mounted on drawing-paper, with a plate-mark stamped in, and a more delicate and exquisite set of little pictures was never exhibited; they were mostly landscapes of English and California scenery, and were a revelation to everybody, showing what can be done with platinum when properly handled. Mr. Woods was equally successful in his 8 x 10 enlargements on Eastman's bromo-gelatine paper, letter C. His negatives lost little or nothing in the enlargement; in fact in some instances there was a positive gain, while the soft effects and beautiful tones obtained on this paper were much admired.

Mr. W. L. Oliver began to dabble in photography in 1860 in South America, and for several years used the collodion process, making his own albumenized paper, collodion, and in fact almost everything else. In 1867 he dropped photography, but caught the craze again in 1885, and is now an enthusiastic dry-plate worker. His collection may be divided into two parts: First, pictures made by the wet process in South America from 1860 to 1867, and second, prints from gelatine plates in 1885 and 1886. There were some wonderful pictures in the former class, and leaving rapidity out of the question, it is hard to see wherein lies the boasted superiority of the modern photographer and his methods. True the prints made a quarter of a century ago are not so new and bright-looking as the freshly-printed and mounted picture, but for delicacy, detail and atmospheric effects, these prints cannot be excelled to-day. It is only by contrast with the newer work that they look a trifle faded, but no more so than would an etching or engraving in the same space of time. Some forty of these prints were shown, ranging from half-plate to about 8 x 12 in size. Of the smaller prints, the most noticeable are two copies of paintings made with a cigar box for camera and burning glass for lens. The labor of obtaining some of the large negatives must have been stupendous. For example, there are several prints of La Cordillera, Chili, 18,350 feet above the level of the sea. The



"Coral de Carretas," Chili, contains moving figures, which are practically sharp, showing that the negative must have been taken in a small fraction of a second. Mr. Oliver's prints from dry-plate negatives are mostly half-plate, and embrace a large series of instantaneous views made in Alaska last summer, and on board ship. Several prints of the great Muir and other glaciers are very fine.

Mr. R. H. Naunton shows several 5 x 8 landscape and instantaneous views. Fort Point with curling waves and breaking surf is very good.

Mr. Luther Wagoner exhibited a series of twenty 5 x 8 prints, mostly landscape. These, although not remarkable in any way, were all specimens of good, clear, brilliant work, and careful printing.

The exhibit of Mr. Virgil Williams is worthy of especial notice and attention as adding a new bulwark to the art side of photography. Mr. Williams is the director of the Art School and School of Design in San Francisco, and is an artist of more than local fame. In turning to photography, his artistic perception has been exercised to the utmost, and consequently his exhibit was a revelation to most amateurs. His pictures are small (5 x 7) but each one tells a story. Besides working in silver, Mr. Williams has secured some fine effects on the much abused ferro-prussiate paper. The following titles will give as good an idea of Mr. Williams' work as would half a column of description: "The Art Critic," "A Country Dark Room," "A Chicken Ranch," "The Old Hunter," "Picking Peaches," "In School," "The Laborer," "The First Letter," "A Sketching Party."

*(To be continued.)*

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### POLARIZED LIGHT.

BY GEORGE M. HOPKINS.

[Read before the Society of Amateur Photographers of New York.]

LIGHT—so abundant, so free, so necessary in the economy of nature; so regularly and uniformly supplied—is regarded as a matter of course, and not one in ten thousand of the recipients of its benefits ever think of its mysterious nature, or attempt in any way to investigate its phenomena. But for the discoveries and deductions of such men as Newton, Huygens, Malus, Brewster, Fresnel and Young, we of the present day might have remained in utter darkness as regards the nature of light.

To the photographer, the study of light is vital; and to the amateur it should become an object of systematic study and experimental investigation.

Working on the negative principle, so common in human affairs, we shall not examine light in its bearings on photography, neither shall we deal to any considerable extent with elementary principles, or with phenomena, which, in the logical order of things, should come first in the study of this great subject, but will with one dash enter the most difficult, least generally understood, and most theory-beleagured branch of this study, viz., that of polarized light.

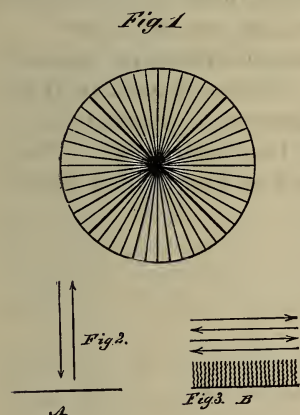
However, we must halt a little at the beginning, to briefly review the accepted theory of the propagation of light, and the effect of some substances upon ordinary white light, before we shall be able to undertake our inquiry into the intricate and almost baffling subject of polarized light.

The emission theory, or corpuscular theory of light, was supported by Newton. It supposes light to consist of exceedingly small particles, projected with enormous

velocity from a luminous body. Although this theory seems to have support in many of the phenomena of light, the velocity of light alone, as at present recognized, would seem to render it untenable, however infinitesimal the projected particles might be. Tyndall has said that a body having the weight of one grain, moving with the velocity of light, would possess the momentum of a cannon-ball weighing one hundred and fifty pounds, and moving with a velocity of 1,000 feet a second; but the most delicate tests known to science have failed to show that light possesses any mechanical force.

The emission theory of light was first opposed by Huygens and Euler, who believed that the propagation of light was due to wave motion. Several eminent scientists supported Newton, but the undulatory theory was finally established almost beyond a question by Young and Fresnel.

Sound is propagated by the alternate compression and rarefaction of air, the movements of the waves being parallel with the line of travel of sound. But not so with light. The vibrations of light are at right angles with its line of progression. These transverse vibrations in ordinary white light are in every conceivable direction across the path of the light beam. Their course is represented diagrammatically by the figure now on the screen (Fig. 1). We can readily see how the longitudinal vibrations of air would affect the ear drum. Fig. 2 shows this action diagrammatically, the horizontal line, A, representing the tympanum, and the two arrows the forward and backward motion of the air wave.



The retina to be affected by the transverse motion of the particles must in some way be rendered sensitive to such a vibration. Comparatively recent microscopical research has shown that the retina is studded with fine rods, as shown at B, Fig 3, which are supposed to be susceptible of being influenced by the lateral movements of the particles in the wave front of a light beam.

The difference between sound waves and light waves may perhaps be best illustrated by two simple experiments, the first of which consists in passing in front of a narrow slit a plate traversed by longitudinal wave lines alternately approaching and receding from each other. The gathering together of the light dots represents the compression of the air at the wave front, followed immediately by a separation of the dots, representing the rarefaction of the air between the crests of the waves; then by a return of the dots to the point of starting, and so on; the motion of the point of greatest compression being continuously progressive in one direction, while the air particles themselves, represented by the light dots, make limited excursions, which are confined to the length of the slit.

To represent in a crude way the transverse vibrations of light, a sinuous slit is moved behind a grating. Series of light dots are thus produced, which move up and down as the sinuous slit is drawn along. While each dot is confined to a vertical path, the line formed by the series of dots exhibits wave-crests and hollows, and the waves move continuously forward. By moving the glass rapidly, the persistence of vision enables us to see the paths of the separate dots as straight luminous lines crossing the path of the light beam.

It is clear that there can be no vibration except there be something to vibrate; wherever there is motion, it is self-evident that something must move. This fact necessitates the assumption of the existence of a medium far more subtle than ordinary matter, which pervades all matter and all space, and is in the interior of all bodies, of whatever nature. It is light, elastic, and capable of transmitting vibrations with enormous velocity. This hypothetical medium is called *ether*. Every luminous body is in a state of vibration, and communicates vibrations to the surrounding ether.

Although light is propagated in straight lines, its direction may be changed by reflection by any body that will not absorb it. The reflection of light from a mirror is a well known example of this. The direction of light may also be changed by refraction, by allowing it to pass from one medium to another having a different density. By holding a strip of plate glass obliquely before the slit in the lantern, the change of direction of the light is most perfectly shown by the lateral displacement of a portion of the beam of light on the screen.

Glass, like all uncrystallized bodies, is said to be single refracting, because it diverts the ray in one direction only. By placing a rhomb of Iceland spar before a small aperture in front of the lantern, two images of the aperture appear on the screen, showing that the beam of light has been split up in two. One is called the ordinary ray, the other the extraordinary ray. As the rhomb is turned, the extraordinary ray moves around the ordinary one. This property of splitting the ray transmitted through the crystal, which was first noticed and commented on by Erasmus Bartholinus, in 1669, is known as double refraction. It is possessed by many crystalline bodies in a greater or less degree. Both rays emerging from the spar have acquired peculiar properties.

Newton, after investigating the properties acquired by light in its passage through the spar, concluded that the particles had acquired characteristics analogous to those of magnetized bodies; that is, they had become two-sided, and were, in fact, polarized.

Light, in the state of two sidedness as observed by Newton, is still known as polarized light. By inserting the double refracting crystal known as tourmaline between the rhomb of spar and the screen, and turning it, the ordinary and extraordinary rays will be extinguished and will reappear in alternation. All vibrations, except those executed parallel with the axis of the tourmaline, are quenched.

To render these effects visible, a Nicol prism (which will be described later) is now inserted between the rhomb and the screen, as a superior substitute for the tourmaline. By turning the Nicol, the light spots produced by the two rays become alternately visible and invisible. One quarter of a revolution of the prism is sufficient to extinguish one ray and bring the other out; and a further turning of the prism through another quarter of a revolution reproduces the extinguished light spot and effaces the visible one. This experiment shows that the vibrations of the two rays are in planes at right angles to each other. A beam of light in which all of the transverse vibrations are parallel with a single plane is plane polarized. Both of the beams emerging from the spar are therefore plane polarized, but in different planes.

The course of the light through the rhomb of Iceland spar when the incident ray is perpendicular to one of the faces of the crystal, is shown in the diagram,



(Fig. 4) on the screen. The ordinary ray, A, passes straight through the crystal, while the extraordinary ray is bent away from the ordinary ray on the line B.

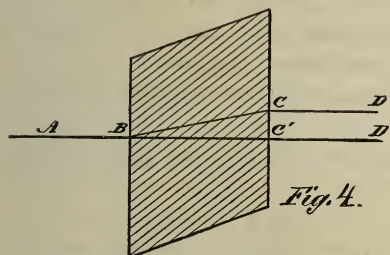


Fig. 4.

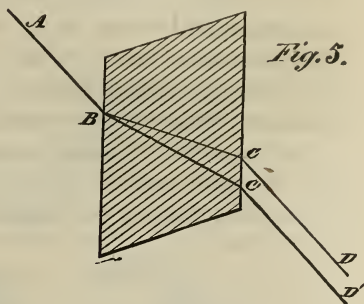


Fig. 5.

When the incident ray enters the side of the rhomb at an angle (as shown in Fig. 5), the ordinary ray follows the law of refraction, and the extraordinary ray is bent away from the ordinary ray, as in the other case.

The most complete instrument for polarizing light, and analyzing it after its polarization, is the Nicol prism, made from a rhomb of Iceland spar, and named after its inventor. In this prism the ordinary ray is disposed of, and the extraordinary ray alone is used.

The prism, which is shown in the diagram (Fig. 6) on the screen, consists of a rhomb of Iceland spar, divided through its axis on the line D D, with its ends cut off at right angles to this line. The two halves of the prism are cemented together by Canada balsam, whose index is between that of the two indices of the spar, so that the ordinary ray, B C', meets the film of balsam at an angle which is sufficiently oblique to secure the reflection of this ray to one side, where it is lost, while the extraordinary ray, B C, passes through the balsam, and onward through the other half of the prism in a perfectly polarized condition.

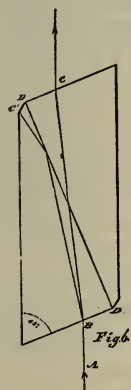


Fig. 6.

To observe the effects of polarization, an analyzer is required. Anything that will act as a polarizer will also serve as an analyzer, and as the Nicol prism is unsurpassed as a polarizer, it will answer equally as well as an analyzer.

Perhaps the action of polarized light cannot be better illustrated than by a

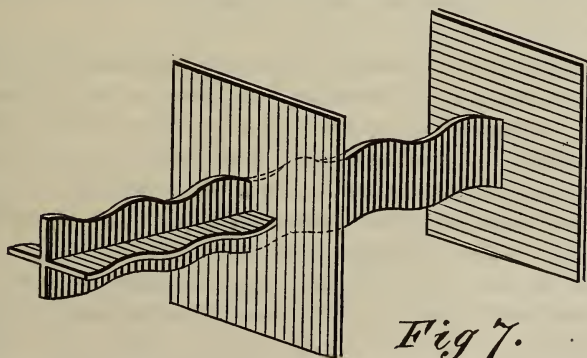
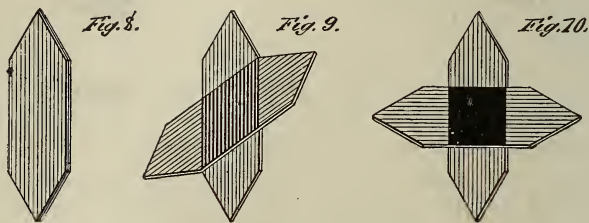


Fig. 7.

representation of a hypothetical beam of light and two tourmaline plates (Fig. 7). There is shown the beam of light with vibrations traversing the path of the beam

in two directions. On reaching the first tourmaline plate, those vibrations which are parallel with the axis of the tourmaline crystal (represented by the parallel line) are readily transmitted, but all the vibrations in any other direction are extinguished. The beam, now polarized, passes on to the second tourmaline plate, and the axis of the crystal being arranged at right angles with the plane of vibration, it is extinguished; but if the axis of the second tourmaline is parallel with the plane of vibration, the light will pass through.

If the axes of the tourmalines are arranged at an angle of 45 degrees with each other, the light is only partly extinguished. These effects of the two tourmaline plates are illustrated by the diagrams—Fig. 8 showing the crystals with their axes



arranged parallel with each other; Fig. 9 showing them arranged at an angle of 45 degrees; and Fig. 10 showing them crossed, or arranged at right angles with each other, exhibiting a complete extinction of the ray at the intersection of the crystals.

If now, when the polarizer and analyzer cross, a double-refracting crystal be inserted between the polarizer and analyzer, the light will be more or less polarized, and caused to again vibrate in different planes.

It is evident that when light vibrations are executed in unison (if such an expression may be used), as when the beam is polarized, no interference can occur, and consequently no colors appear, so long as the light is polarized; but when it is depolarized by a crystal or film, thin enough to give rise to interference, gorgeous colors will appear. Examples of this will presently be shown.

Besides those means of polarizing light already described, there are others which should be examined. Light is polarized by reflection at the proper angle from almost every object; glass, water, wood, the floating dust of the air, all under certain conditions will polarize light.

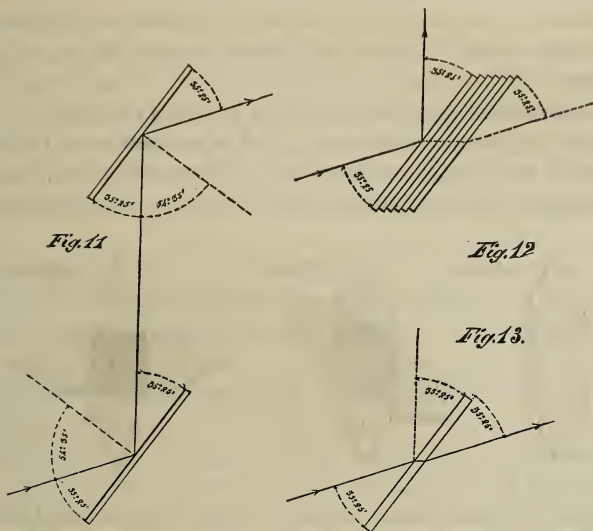
That the light beam becomes polarized, may be readily ascertained by receiving it through a depolarizing body and an analyzer.

A few days since, while passing one of the ponds in Prospect Park, at about four o'clock in the afternoon, I observed that the light reflected by the surface of the pond was polarized. A little later, I examined the light reflected by an aquarium and various articles of furniture in my library, among which were a leather-covered chair and a black carpet, all of which exhibited the phenomenon to a marked degree, the leather chair covering being the best polarizer.

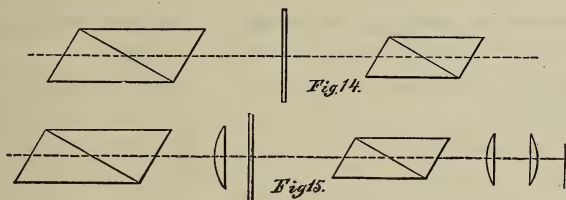
Two plates of unsilvered glass, receiving and reflecting light (as indicated in Fig. 11), act respectively as polarizer and analyzer.

A series of thin plates (Fig. 12) used in the same way, exhibit it in a marked degree. These plates will also act in a similar manner when the light is transmitted through them, a part of the light in each of these cases being reflected and a part transmitted, both the reflected and transmitted beam being polarized, but in planes at right angles to each other. A single black glass plate is a good

polarizer (Fig. 13), but a bundle of glass plates backed by black is perhaps better. The arrangement of the polarizing and analyzing prisms with reference to the



object to be examined is shown in Fig. 14, and the simple arrangement shown in Fig. 15 is the one employed for more of the experiments to follow.



The beam of polarized light may be depolarized by a body which will produce no color, but will simply render the field light when the polarizer and analyzer are crossed (as shown by the insertion of this rather thick piece of mica).

By placing thin pieces of mica in the same position, various colors are produced. When the polarized beam encounters the thin mica, it is resolved into two others at right angles to each other, the waves of one being retarded with reference to the other; but as long as these rays vibrate at right angles to each other, they cannot interfere. The analyzer reduces these vibrations to the same plane, and renders visible the effects of interference due to the retardation of the waves of one part of the beam. The thick piece of mica gave no color, because the different colors were superposed and blended together, forming white light.

In a slice of Iceland spar cut at right angles to the axis of the crystal, the ray is not divided as it is when the light passes in any other direction through the crystal, and if the slice be placed in a parallel beam of polarized light, no marked effect is produced; but when the beam is rendered convergent, by a lens interposed between the polarizer and the crystal, beautiful interference phenomena are developed.

When the polarizer and analyzer are crossed, a system of colored rings intersected by a black cross appears.

The arms of this cross are parallel with the planes of the polarizer and ana-



lyzer. On these lines no light can pass, but between them the colors of the rings increase in intensity toward the middle of the quadrants inclosed by the arms where the interference is most marked. Turning the polarizer or analyzer causes the complementary colors to change places, and brings out a white cross instead of a dark one.

By inserting the bundle of glass plates as an analyzer, polarization by both reflection and refraction may be shown. The image projected on the ceiling is complementary to that shown on the screen, and the effects in the two images will be exchanged for complementary effects when the polarizer is turned through a quarter of a revolution.

A plate of selenite, which in the polarized beam produces blue on the screen, exhibits yellow on the ceiling; a plate yielding green on the screen shows red on ceiling, and again turning the polarizer causes the complementary colors to exchange places.

A crystal of nitre, which is one of the class of biaxial crystals, exhibits two centers of rotation; sugar exhibits two centers, with one pair of brushes in each; a quartz crystal disperses the light so widely, that with the present apparatus it cannot be exhibited as a whole, but splendid bands of color appear.

Proceeding to the examination of microscopic crystals and other objects, I will exhibit them by polarized light in succession, simply giving their names:

Cane sugar.

Salicine.

Salicine, with half-crystals backed by mica, to show rotation reversed by the mica.

Santonine, with selenite.

Kinate of quinia.

Asparagin.

Aspartate of cinchonidine.

Stearic acid.

Lithic acid.

Boracic acid.

Tartaric acid.

Benzoic acid.

Sulphate of copper and magnesia.

Sulphate of ammonia and magnesia.

Sulphate of ammonia and iron.

Platino-cyanide of magnesium.

Platino-cyanide of barium.

Platino-cyanide of yttria.

Chloride of barium.

Rhodizite.

Granite.

Fish scales.

Palate of limpet.

[It should be stated that a special screen, made of thick pearl-white tracing-paper, secured to a common wood hoop, four feet in diameter, by mucilage or flour paste, was used. The audience viewed the illustrations by transmitted light, and it was noticed that the delicate colors came out very perfectly on the paper screen, which was accounted for by the fact that no light was lost. The various changing kaleidoscopic hues that appeared as the different chemicals were projected on the screen were very attractive and pleasing to those present.—

PRES. SOC. OF AM. PHOTO.]

## ENLARGING ON ARGENTIC BROMIDE PAPER.

APRIL 20, 1886.

*To the Editors of ANTHONY'S BULLETIN.*

At the establishment of Messrs. Morgan & Kidd I saw an article that may be of interest to your readers. When visiting them last year they showed me their mode of enlarging from small negatives on their argentic bromide paper. Their apparatus consisted of a bellows camera, with the ground-glass side towards a window, and screened around, so that any light entering the room must come through the camera. In place of the regular dark slide, a negative holder was slid in its place. On the front end of the camera was the lens, and the paper, on a moveable easel, in front of it. Outside the window was a reflector, covered with white material. I was surprised at the strength of the image on the screen, and they made some enlargements from quarter-plate negatives on 18 x 22, or full sheet of paper, in about one and a half minutes. The paper is passed into another room, where it is developed and washed, and the fixing is performed in still another room.

Their enlargements on porcelain are made in the same manner and on the same easel. The glass is held in position by three nails, two at the bottom and one at the side. After the print is made, it is developed by ferrous oxalate developer in the same mode as the paper. They made some of these while I was there, and one from a very intense negative, being under-printed, was washed, replaced on the easel (the pins having been left undisturbed for the purpose), and a further exposure completed it. They employ a large force, and everything seemed to go like machinery, so perfect were their arrangements.

The paper was developed in a large glass-bottomed tray, much too large for the print; so, in order to confine the developer to the print, two strips of wood were laid on the bottom of the tray, so as to come just under the edge of the paper. This raised it sufficiently to enable the manipulator to handle it dexterously. The strips being wet, cling tenaciously to the glass. To any of your readers who may visit London, a look at their rooms would not be lost time. I found Mr. Kidd most courteous, and regretted the absence of Mr. Morgan, whom I should have been pleased to meet.

Yours truly,

OBSERVER.

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 OUR ILLUSTRATION.

WITH this issue of the BULLETIN we present our readers with a mosaic of photographic gems made by one of the busiest men on Long Island, and withal an amateur photographer. Mr. W. H. Deming is an engineer by profession, and has taken up photography as an interesting and entertaining pastime. The beautiful results of some of his rambles among Long Island scenery, around North Port Harbor, Centre Port, Middle Village, Lloyd Harbor Light-house, Huntington Bay, East River and Lake Mahopac in Westchester County, are embodied in the illustration that adorns this issue of the BULLETIN. These pictures were taken with a variety of apparatus, including the 4 x 5 amateur camera, the 8 x 10 Novel camera, and the little  $3\frac{1}{4} \times 4\frac{1}{4}$  Bijou. The lenses used were E. A. single achromatic view lens; the E. A. wide angle, and the C Platyscope. They are all pictures from Stanley plate negatives, which were developed with Cooper's developer in various proportions. What is still more interesting, the

negatives from which the mosaic was printed were made upon Stanley plates with a C platyscope lens, and the time was from one to four minutes with inside light, on a day when the weather varied from faint sunshine to snow and light rain. The arrangement of the pictures is also the artistic work of Mr. Deming, and the originals covered a space 42 inches long. This beautiful work comes from the leisure hours of a very busy man, and should be an incentive to work to all our amateur friends.

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### A GOOD THING TO HAVE.

BY O. G. MASON.

[Secretary of Photographic Section of the American Institute.]

"BLESSED be the man who invented spring clothes-pins," has been thought or said by thousands of photographers who have used them for hanging paper, holding masks, printing margins, clouds, etc., and now some ingenious victim of washerwoman's wrath and a flattened pocket-book has invented "artist's cuffs," an article which must come into general use with all who appreciate economy, neatness of appearance, and peace of mind. They are a necessary article, without which



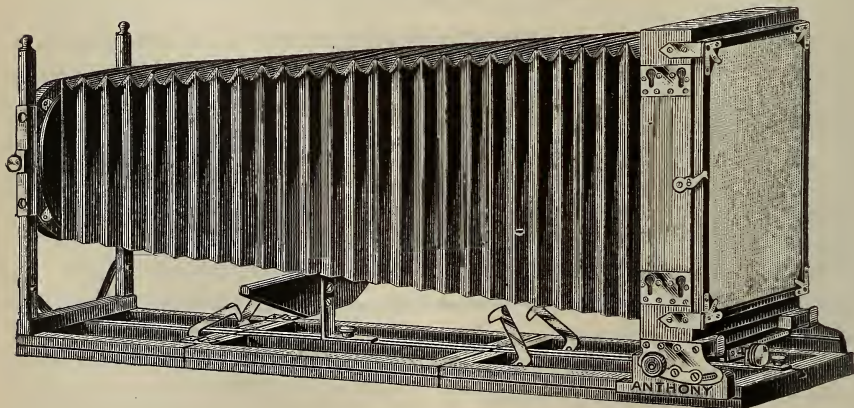
no photographer, chemist or other worker in clothes-staining or corrosive solutions can afford to do business. They completely fill a want long felt. The inventor knew what a good thing was, and he has given it to his fellow sufferers who have heretofore been obliged to risk and loose shirts, cuffs, sleeves, coats, etc., or go about their work with bare arms like a village blacksmith.

The ease with which the cuffs are put on and off, the perfect protection and peace of mind which comes with their use, must make them an indispensable article in every gallery, and with every amateur. Thousands will think or say, Bless the man who invented "Artist's Cuffs."

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### A LONG OR SHORT CAMERA AT WILL.

BELOW we give a cut of a new camera, recently introduced by our publishers,



in which a long or short bed can be used, at the desire of the operator. It only weighs seven pounds, and is very useful for copying, enlarging, etc.

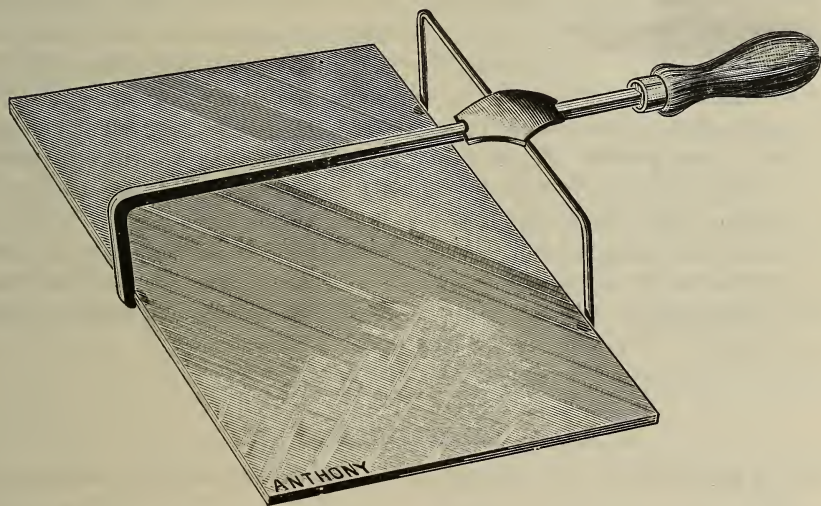


This is really a Novelette camera, with a single swing and extra long bellows. It can be extended to a focus of  $32\frac{1}{2}$  inches by means of the extension bed, which is held firmly in position by tongue and groove, with dowel-pins and hook clamps. By removing the extension, an ordinary 8 x 10 Novelette camera is obtained. A movable support for the extended bellows is furnished, as shown in the cut.



### A NEW AID IN DEVELOPING.

WE give herewith a cut of a very neat little device to be used in developing. Many of our amateur friends complain bitterly about staining their fingers when using the pyro developer, and this neat little contrivance has been invented to meet the needs of just such sufferers. The drawing is so plain that it almost explains itself. The cross piece slides along on the bar that carries the handle, and by means of the little curved feet the glass negative is held firmly during the immersion of the plate in the developer. By the use of this device the frilling of



many plates can be retarded and may be entirely prevented. When picking up a plate with the fingers in the ordinary way, it will be noted that frilling usually commences where the fingers have touched the edges of the plate most frequently; with this new fork for developing, the latter trouble can be greatly ameliorated. Furthermore, constantly placing the fingers in the developer raises its temperature, which in the summer is not to be recommended. There are scores who have the greatest difficulty in cleaning their hands from pyro stains, and for such as these this new aid will be a great blessing.



ONE of those German scientific fellows, Herr Luders, of Gorlitz, has invented a "photographic hat." It is a hat which contains a small but complete photographic apparatus. There is a minute opening in front of the hat in which is a lens. By pulling a string the wearer can at any time take an instantaneous photograph of any object he wishes.

### GERMAN PRIZES.

To the Editors of the BULLETIN.

MR. K. SCHWIER, the President of the German Photographers' Association, desires me to call your attention to an error in naming the prizes offered by the Eilender & Muller Stiftung at the Braunschweig Convention.

The first prize is not, as erroneously stated, *a watch*, but *a clock*; and the second prize is a goblet. Both are of bronze (*cuivre poli*), of great artistic merit and beautiful workmanship.

Very respectfully,

CHARLES EHLMANN.

At a recent meeting of the "*Verein zur Forderung der Photographie*," in Berlin, the chairman spoke about Obernetter's color-sensitive dry plates, which, in regard to sensitiveness, are equal to an ordinary plate.

The speaker showed a number of Obernetter photo-engravings, mainly reproductions of oil paintings, which, according to the judgment of those assembled, could hardly be surpassed. Obernetter's photo-engraving process, besides being very handsome, was distinguished in comparison with other light-copper processes by admitting a much larger number of prints to be made from one plate than heretofore. The etching of the plate at Obernetter's was done in such a manner that a chloride of silver diapositer etched itself, so to speak, into the copper plate. This etching process was supported by a galvanic current, and thus it was possible to etch into the copper plate vertically, and much deeper than in the ordinary etching process, where there was great danger of side etching. This deeper etching not only permitted a steeling of the copper plate, but later on a second and third repetition of this process, which explained the possibility of furnishing such a large number of copies. One of Mr. Obernetter's plates had already furnished 18,000 copies, and the last copy was still very excellent. The prints are, under such circumstances, of course much cheaper, the expensive retouching being avoided by this process.

### THE MODEL MAN.

He don't play the fiddle, part his hair in the middle, nor dress like an Anglican dude.

When he goes to a party with Meigs or McCarty, he never is noisy and rude.

He lives in frugality and sweet conjugality, and wants pie but two times a day;

He never eats onions nor treads on your bunions, nor growls when you get in his way;

He's wise and he's witty, persevering and gritty, and has a magnificent head;

He's all light and sweetness, he's thorough completeness, he's perfection in short  
—but he's dead!—[*From the Lynn (Mass.) Union.*]

THE BULLETIN is as welcome as the face of an old friend. It is like good wine, for it grows better and better as it grows older, and each number seems to be trying to be better than the last—and, what is more, it generally succeeds.

I wonder any photographer should go without this publication to keep him posted in the progress of his art.

E. K. HOUGH.

# ANTHONY'S Photographic Bulletin.

EDITED BY

Prof. C. F. CHANDLER, Ph.D., LL.D.,  
Aided by ARTHUR H. ELLIOTT, Ph.D., F.C.S.,  
and a corps of practical assistants.

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*E. & H. T. ANTHONY & CO., Publishers.*

## THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.

A REGULAR MEETING of the Society was held Wednesday evening, April 7, 1886, with the *President*, Mr. FREDERIC GRAFF, in the chair.

Mr. Graff announced to the society the death of their fellow member and late President, Mr. Joseph W. Bates. The loss to the society was one that all must deeply feel, particularly the older members. Mr. Bates became a member in 1863, and during his long connection with the organization had endeared himself to all with whom he came in contact, for his uniform kindness and courteous manner. The older members were indebted to him for much valuable aid in the earlier days of photography in this country, when his frequent visits to Europe afforded him facilities for collecting information which he was always ready to impart to his fellow members.

Mr. Ellis, who joined the society about the same time as Mr. Bates, spoke of the help so frequently given by him to others interested in photography in the days when so much was new, and the opportunities of getting in-

formation on the subject were far less frequent than is the case at the present day.

The following resolutions were offered by Mr. Browne, and carried unanimously.

"The Photographic Society of Philadelphia having heard of the death of their late fellow member and former President, Mr. Joseph W. Bates, and desiring to express their feelings of regret and respect for their deceased associate, offer the following resolutions:

"*Resolved*, That in the death of Mr. Bates, the society has lost a most attentive and energetic member, and one whose genial character endeared him to all the officers and members of the association. His resignation of the presidency of the society, after a service of seven years, was a source of regret when accepted. His removal by death will be an abiding subject of sorrow as often as recalled.

"*Resolved*, That a copy of this minute be entered on the records of the society, and an attested copy be sent to the family of our deceased member."

On behalf of Mr. William Bell, the Secretary presented a large photographic portrait of the late Mr. Bates, which was received with a vote of thanks, and ordered to be framed and hung in the room of the society.

The resignation of Mr. I. Norris Cochran from active membership was presented and duly accepted.

The Committee on Membership announced the election of Mr. J. Hunter Ewing as an active member.

Through the question-box it was asked: "Does burnishing prevent prints from fading?"

Mr. Shoemaker considered it a preventative, having never known a burnished print to fade.

Mr. Rau thought enameling would prevent fading, as it protected the picture from the air, but did not think burnishing would have this effect.

Dr. Jordan had known burnished prints which hung in the sun to fade very materially. He could not say how thoroughly they had been washed.

It being suggested that the paper itself was liable to turn yellow in time, Mr. John Sartain said that an engraving would sometimes turn yellow in that part of the paper around the margin which had not been under pressure from the plate, while the high lights of the engraving remained white. The compression of the surface of the paper by the plate seemed to close the pores, rendering it less susceptible



to the action of the air and such gases as would change its color.

The question being asked if hyposulphite of soda was used in making paper, Mr. McCollin stated that it was not used in paper intended for photographic purposes. The Rives paper was made of flax bleached in the sun.

A second question in the box asked: "What film should I use in micro-photography (reduction through microscope), collodion or albumen, or both, and how should it be salted?"

Mr. Browne had used both albumen and washed emulsion, but considered albumen the best.

Mr. Fasset stated that Mr. Isaac Rehn, who formerly did a great deal of work of the kind, used collodion with malt preservative, which he found superior to anything he could get.

By request of the society, the paper for the evening on "*Æsthetics and Photography*," by Mr. Xanthus Smith, was read. [See page 239.]

Mr. Smith then proceeded to show a number of slides made from fine engravings of landscapes by Linton, Stanfield, Harding and Turner, Royal Academicians—views of places in England or on the Continent of Europe—in which, in addition to fine composition, there is displayed the most agreeable arrangements of light and shade in various proportions.

Among the figure subjects shown was one by Sir David Wilkie, R. A., "*Sunday Morning*," a remarkably choice piece of composition and effect. The subject contains three figures: an old man, about to shave, sits in a high-back chair by a fire-place, stropping his razor. Beside him is a table with a looking-glass leaning against some books piled up to support it. On the other side of the table a young woman is washing a boy's face, the basin set upon a chair. The surrounding accessories complete the story of preparation for church. "The picture is divided diagonally," Mr. Smith said, "nearly half and half, into half-light and half-shadow, which gives great breadth of effect. The concentrated high lights are all near the center, and very skillfully disposed. It may be said to be unique as a work of its kind, and, to a great extent, comes within the scope of the amateur photographer to imitate—the life and still-life objects which comprise it being about us in our homes in great varieties, and only wanting the pains and taste that can arrange or group them."

Paramount in the examples shown were the following qualities: a large proportion of half-light and half-shadow; a few concentrating

high lights of agreeable forms and grouping well; and a corresponding amount of deep shadow, some portion rather deeper than any other in the picture—the highest light and deepest shadow coming together in agreeable forms, and a considerable amount of quiet, undisturbed space to give what artists call repose.

The examples shown from actual scenes, the work of members of the society, the speaker said, "comprised a great variety of remarkably original and picturesque subjects, in which there had been so much artistic knowledge and taste used in the selection of subject, choice of point of view in the landscapes, grouping in the figure pieces, and proper effects of light and shadow, that it would seem very clear that it could only be the most one-sided and prejudiced mind that would deny a connection of art with photography, or a claim of any one working with the camera to the title of artist."

In making especial notice of the following work, Mr. Smith said: "It must be understood as in no way disparaging to that not shown or mentioned, these particular views having happened to attract my attention during a brief visit to the exhibition held the past January at the Pennsylvania Academy of Fine Arts."

A very artistic and beautiful vignette by Dr. Piersol—subject: a close wood and creek; scene, Upper Wissahickon—having the qualities, good composition, breadth of effect, atmospheric perspective, and that characteristic which is akin to what artists call picturesqueness and openness of touch in their work, in contradistinction to solidity.

By Mr. Galloway C. Morris, a remarkably choice extended landscape view—"Lake George." Fine composition, good effect of light and shade, a very fortunate proportion of half-tones, with the most suitable amount of deep shadow in the proper place, and so much detail in the masses of shadow, that, while their power and breadth are not lost, they are prevented from being blank spots.

"Departed Power," by Mr. J. C. Browne, is an example showing how, by judicious selection of point of sight, a very fine picturesque composition is made of what might be a stiff and offending subject—the great old mill, with its wheel, and a fine tree, grouping in the most varying and agreeable manner.

A beautiful piece of grand landscape, "*Via Mala*," by Dr. Ellerslie Wallace, having in addition to good composition and breadth of effects the most infinite variety of finished detail

and exquisite perspective. The impression of grandeur of subject is remarkably well given. It was a matter of regret to Mr. Smith that want of time did not permit his showing more than he did of Dr. Wallace's admirable work.

Mr. William H. Rau's view at the entrance to the Zoological Gardens, this city, is a remarkable instance of fine landscape perspective. The character of the scene, with the picturesque foreground buildings and one finished passage of distance succeeding another into the extreme distance, miles off, together with the skillful treatment, by which the most intense shadow is near the immediate foreground, and the tones die off by delicate gradations to the horizon, make it, indeed, a finished work.

By Mr. John Bartlett—an upright scene on the Wissahickon, forming, from its admirable composition and fine gradation of tones, a complete and beautiful picture.

A scene on the Wawaset, by Mr. J. G. Bullock, was remarkable, in addition to good composition, for exquisite gradations of tones and the way in which the figures had been disposed, a black horse in a cart forming a perfect focusing spot of dark, and giving a proper value to all the other shadows.

An admirable picturesque study on the Brandywine Creek, by Mr. Robert S. Redfield. The subject well chosen, and of a character particularly well adapted to photography. It has remarkably fine gradations of tones from the foreground to the distance, and the placing and posing of the very suitable figure shows the best artistic skill.

Of the work of Mr. George B. Wood—of which there was rather more shown than that of other members—Mr. Smith, of course, as a fellow painter saw much to commend in the skillful way in which he had overcome the obstacles incident to the pursuit of art, and by his knowledge and perseverance—for he is an indefatigable worker—has got together an immense number of fine effects of the most varied and interesting character, many of which are being published by wood engraving, and will assuredly do a great deal towards establishing photography in its proper rank as an art.

The pictures in illustration of Mr. Smith's paper were projected on the screen by means of a pair of Mr. Fred. E. Ives' new and compact form of dissolving lanterns, using the etho-oxygen light, devised and patented by himself. All the apparatus worked most admirably in the hands of Mr. Ives.

Mr. Coats mentioned that having failed in

an attempt to take a church interior on a glass plate, owing to halation, he had tried gelatine paper with great success, and a perfect absence of the trouble.

Mr. Pancoast presented, on behalf of Mr. W. K. Burton, of London, a portion of his exhibit at the late exhibition. It was received with a vote of thanks.

Mr. Corlies presented a lantern slide portrait of the late Mr. Bates, which was an exceedingly good likeness, and for which the thanks of the society were tendered.

Adjourned. Fifty members and three visitors present. ROBERT S. REDFIELD,

*Secretary.*

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## THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.

REGULAR MEETING, MARCH 9.—*Continued.*

Mr. BEACH then exhibited an 11 x 14 photograph of the Titan Club, taken in the grand dining-hall of the Hotel Brunswick by the aid of the magnesium light. The exposure was estimated at fourteen seconds.

Mr. ROOSEVELT—*Mr. President:* I would like to ask a question about the vulcanite and the bromide paper you spoke of at the last meeting—whether a sheet of vulcanite is prepared in any way before the paper is dried on it?

Mr. BEACH—There is no preparation required. You simply purchase the vulcanite at any ordinary rubber store, and while the gelatine print is damp after it is washed, you lay it directly on the rubber, and when it is three-fourths dry, or almost dry, you can strip it right off as I did at the last meeting.

Dr. PIFFARD—Unpolished rubber don't give nice pictures; they are rough and spotty.

Mr. BEACH—The kind wanted is termed "hand polished."

Mr. COOK—I took some old negatives and cleaned them off and rubbed them, and squeezed my prints on them, and I succeeded in getting a very good polish. If the glass is thoroughly cleaned (and I cleaned it with electro-silicon, and you have to wash it thoroughly to get off all the grease) I then squeezed the prints on to that, and I got very satisfactory results.

Dr. PIFFARD—I have taken plate glass and cleaned it as well as I knew how, and I could get one print in five off, and the others I could not get off at all except by using boiling water.

Mr. BEACH—Mr. Cook's suggestion is something new to me, because I had understood from an experience that I had had, that

there was no way to get the paper off of the glass, unless I oiled the latter. I tried oiling and succeeded very well. Another thing in regard to polish is important, and it is, that a paper which is thinly coated with gelatine will not give as high a polish as one which has more gelatine on it.

Mr. Cook stated that the paper which he squeegeed on glass was the Eastman thick heavier-coated negative paper.

Dr. Piffard said he had no difficulty with the negative paper at all; it readily stripped from the glass.

Mr. Cook—I made positives on the negative paper.

The discussion then terminated, and the meeting adjourned.

#### SPECIAL MEETING, MARCH 23, 1886.

The meeting was called to order at 8.20. President F. C. BEACH in the chair.

The usual social meetings were announced and the Annual Meeting of the Society for April 13th. At that time it was expected there would be an exhibition of presentation prints. In regard to the latter, Mr. Beach said:

It is not expected that the prints themselves shall be exclusively the work of members. The idea is that the members shall make the negatives themselves, and the prints can be prepared by some one else, if desired. I understand that there is some misapprehension as to the circular in that respect.

The Secretary then read the following letter from

THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA, March 12, 1886.

Mr. R. A. C. SMITH,

*Secretary Society of Amateur Photographers of New York.*

DEAR SIR,—The report of our Exhibition Committee, submitted to the Society at the meeting held March 3d, contained the following clause:

“As a final suggestion, the committee would call attention to a plan which has been talked of among some of our members, and which they have reason to believe would meet the approval of the New York and Boston Societies, that hereafter, instead of general exhibitions being held by all three of the societies each year, *but one*, in which all should take part, be held *annually*, the *three societies having it in charge by turns*—say New York next year, Boston in 1887-88, and Philadelphia again in 1888-89.

“This, while not interfering with annual exhibitions by each society, confined to the work

of its own members, would enable all three to unite each year in one general exhibition, which would be more successful because of the united effort, and more interesting to the public in each city from not recurring too frequently. The prizes won at these exhibitions would be more valuable, as all the best work done in each of the three cities would be likely to meet in competition.”

In furtherance of the plan suggested in the report, a resolution was passed by the society, as follows;

“*Resolved:* That the Photographic Society of Philadelphia hereby agree to hold a general exhibition of photographs once in three years only, provided that the Society of Amateur Photographers of New York and the Boston Society of Amateur Photographers will make a similar agreement, with the object in view to unite our interests and improve our exhibitions thereby.”

The projectors of the plan do not wish to restrict any of the societies in any manner, except to require that the triennial exhibition held by each body shall be a *general* one, admitting work from those outside its own membership. Each society should make its own rules as heretofore.

If the project is agreed to, and exhibitions in accordance therewith are held during the two coming winters in Boston and New York, I can confidently promise that our own members will be well represented, and will do all in their power to render them successful. In addition to pictures contributed by the three cities most directly interested, there should be no difficulty in obtaining numerous valuable exhibits from all parts of this country and England, and other European countries as well.

By direction of our society, I therefore ask you to present the plan to your members, hoping it may meet with their favorable consideration.

A similar letter to this has been addressed to the Boston Society of Amateur Photographers. Very truly yours,

ROBERT S. REDFIELD,

*Secretary.*

Mr. BEACH—I received a letter the other day from our Honorary member, Mr. A. L. Henderson, of London, in which he inclosed photographs of his improved centrifugal machine for separating bromide of silver from gelatine solutions. The pictures were then passed around. [See page 246.]

Mr. Beach here made the announcement that the following members had been elected:



Messrs. Alphonse H. Alker and Charles Simpson, Active Members; C. H. Pope, Associate Member; E. B. Barker and Edward Leaming, Subscribing Members; and E. L. French, a Corresponding Member.

Mr. BEACH—I believe that Dr. Janeway has some specimens of a patented process for changing the color of blue prints, which he will briefly explain:

Dr. JANEWAY—A week or so ago, a gentleman requested me to help him out of some difficulty in regard to blue prints. For several years past there have been many attempts made to discharge the blue from the prints, and change them to other colors, but with little success.

The late Mr. Powell, of Newport, R. I., who was an amateur photographer, and experimented for a number of years, discovered a process for discharging the blue, and coloring them a jet black, purple or brown, by the use of certain reagents. After his death a patent was granted to his representatives, and they sent me a copy of it. He requested me to experiment and endeavor to solve the difficulty.

These specimens which I have, have had but a few moments sunlight, and none have been printed long enough to get the detail; but you will notice that the colors are in accordance with the different reagents used.

I will explain this in a general way, for I do not know that I am authorized to give the particulars, as the thing is a patent. Any paper can be used that can be used for printing. It should be well sized. This paper is first coated with a solution of gelatine. It is then subjected to a combined solution of ammonia-citrate of iron and ferricyanide of potash, in a rather different manner than the usual formulas given for making the blue prints. This, of course, is done in the dark, and the paper is exposed on the negative, and the resulting prints are then placed in three changes of water and we have the ordinary blue print. The paper is then mopped off with a piece of blotting-paper, and subjected to a solution either of carbonate, bicarbonate or sesquicarbonate of soda, or soluble silicate of soda, or borate of soda, commonly called borax, which discharges the color, and there is nothing left of the picture at all on the paper. It is then passed through three changes of water, and then put in a solution of gallic, pyrogallie or tannic acid, according to the different tints which you want the picture to assume.

The moment the picture begins to appear, it is taken out of this solution and washed or

laid on the board, or anything flat, to dry in broad daylight, or preferably in the sunlight. By the time the paper is dry you have your picture. There are great possibilities for this process, and by the use of these acids in different proportions, you can get the different tints, from jet black to purple, brown or sepia color, as you choose.

The whole process, from the time you take it out of the printing frame until you have it in your pocket, will not consume more than thirty minutes, if that long. I think that, for book illustrations, etc., they are much more preferable than the ordinary blue or silver prints. The browns are a great deal more pleasing than the silver print. I don't claim that it is equal in brilliancy, but I think that there are great possibilities in that direction.

Mr. BEACH—I omitted to announce that I have arranged with Professor Laudy to give the society a talk on an improved method of producing oxygen gas. Some time in April the lecture will take place, and I anticipate that it will be quite interesting.

We will now take up the subject for this evening, the "Polarization of Light," and I will state that Mr. Hopkins, who has kindly consented to show us these experiments, will do so in a purely amateur way, without any idea of being a professional at it; and, from what little I have seen, I think that it will be quite interesting.

Mr. HOPKINS—I wish to say, in addition to what Mr. Beach has said, that the apparatus I have here was intended for private use, and I have used it as an amateur; and, if there are any professionals here, I hope they will not be disappointed. [The lights were then extinguished.]

Mr. Hopkins then read a paper on "Polarized Light." [See page 270.] He showed and explained the experiments, as he went along, by means of a special optical oxy-hydrogen lantern, constructed from his own designs. For a screen he employed common thick tracing paper, stretched and pasted over a wood hoop about four feet in diameter. The effects of the polarization of light were seen by the audience on the opposite side of the screen by transmitted light. By this arrangement the beauty of the delicate shades of light were brought out in their full strength, adding much to the success of the experiments. On the lantern was arranged a peculiar wire clamp, for holding the specimens to be thrown upon the screen, in any desired angle or position. By a series of three or four hinged joints the clamp could be readily turned to any particular

point. It was quite a simple, but yet ingenious contrivance.

At the close of the meeting several lantern transparencies were thrown upon the paper screen. The brilliancy of the pictures, as viewed by transmitted light, surprised all those present, and proved that the screen was admirably adapted for parlor exhibitions when a kerosene lamp is used, where the light is weak.

Among the audience were several ladies, and the many expressions of pleasure which were manifested, as several beautiful illustrations appeared on the screen, indicated that the entertainment, though given by an amateur, was an unequivocal success.

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#### ANNUAL MEETING, APRIL 13, 1886.

THE second annual meeting of the society was held at No. 1260 Broadway, on Tuesday, April 13, 1886. *President* BEACH in the chair.

#### *Annual Report of the Secretary.*

My term of office as Secretary has been so brief (only since February 17th last) that I have very little to report, and what information I have has been given me by the President.

Two propositions have come before the society, that of the Belgian International Photographic Congress, whereby uniformity in photographic matters is sought to be accomplished, and also the question of holding a general exhibition of photographs, open to amateurs and professionals, once in three years, as suggested by the Photographic Society of Philadelphia.

A special committee has the latter question in charge, and may report at this meeting. Neither of the propositions has yet been acted upon by the society. Concerning the Photographic Congress, I have not yet noticed any report upon it by any other American or English Society, and I might suggest that the Secretary be instructed to correspond with Mr. Blockhouse, the President, and ascertain from him the number of English societies that have promised to send delegates.

The objects of the proposed congress are certainly worthy of agitation, and if the work laid out was in any measure accomplished, it would inure to the benefit of all amateurs in this country.

Having always been an enthusiastic supporter of the society, and of the objects for which it was organized, I take pleasure in noting its present flourishing condition, and

the interest taken in it by all the members. We should not, in my opinion, stop where we are, but by united, concerted effort, both with our purse and brain, put the society upon such a sound footing, that it will occupy a high place among the photographic societies of the world.

Respectfully submitted.

A. C. SMITH,  
*Secretary.*

NEW YORK, April 13, 1886.

The President then read his annual report.

#### *Abstracts from Annual Report of the President.*

With the close of the second year of the society's existence, it gives me pleasure to lay before you a report of what has been done; of the society's present condition; and of what it is hoped may be accomplished.

In the first place, I desire to call attention to the continued and sustained interest felt by the members in the society, as evinced by the handsome manner in which many have lately aided it financially, also by the excellent attendance which we have had at our meetings, and lastly, by the fact that very few of the older members have left. Members who have handed in their resignations have done so only with words of esteem for the society, and regret that their business called them elsewhere.

It must therefore be conceded that our past condition has been prosperous, harmonious and satisfactory, else we could not be as strong as we are at the present time. It has been my aim, as your presiding officer, to treat every member equally, to avoid unpleasant controversies concerning the business of the society, and to promote harmony and good feeling among the members. I have felt that you have put a great responsibility upon me, and that too much has depended upon my own personal efforts. My idea of a society of this kind, is that a large number of members should prepare themselves to participate in discussions at meetings. We need more investigation and research. So far as I have observed, very few members have the time to spare to prepare papers and discuss intelligently important questions pertaining to photography, and this, I take it, is depriving us of the knowledge of many useful hints. So, to those of you who have an abundance of time on your hands and are interested in photographic research, I extend an invitation to come forward and offer your services for the common benefit of us all.



The following is the revised summary of membership on April 1, 1886:

Active members.....	97
Associate members.....	5
Subscribing members.....	10
Corresponding members.....	11
Honorary members.....	5

Total..... 128

Total membership April 1, 1885. 93

Net gain for the year..... 35

Perhaps the most interesting event in the society's second year was the first annual photographic exhibition, occurring last November. The officers worked hard to make it a success, and were gratified by the manner in which the members responded. To the looker-on, let me say that it is no small undertaking to get up a good exhibition; it involves an immense amount of labor, thought, time and detail. But from the favorable impression which the first exhibition made, I believe with concerted effort we can do still better next fall. I would specially request the members to remember it in their travels and on their vacations this summer; let us try and turn out some extraordinary good pictures this year.

The record shows that we have discussed more photographic subjects and had a larger number of papers read than on the previous year, which in itself is encouraging. Undoubtedly the chief photographic event of the year has been the introduction of paper negatives, with new and improved apparatus for working it, and this has led and will stimulate experimentalists to get up something superior. Improvements progress so rapidly that it is difficult to tell how soon the desired attainment of a substitute for glass and paper will come. That the advance already made was largely due to the enterprise of an American concern is encouraging, and leads one to believe that in this country we may yet be fortunate enough to discover the much desired improvement.

Considerable progress has also been made in rapid gelatino-bromide printing paper for positive prints and enlarging. As it is so much less trouble to take small negatives from which enlargements can be certainly and easily made, the burden of the amateur in traveling can be very materially lightened.

Small negatives are also better for use in making lantern slides, so they serve a three-fold purpose: first, convenience in taking pictures; second, for making lantern slides; and third, for enlarging up to any desired size.

(To be continued.)

## What Our Friends Would Like to Know.

*N.B.*—We cannot undertake to answer communications of a technical character except through the columns of the BULLETIN. Correspondents will please remember.

*Q.*—F. M. S. writes:—Expecting to make an extensive tour this summer, I would like to know of a plan for the best and most compact equipment for making and finishing 8 x 10 views?

*A.*—We cannot spare room in these columns for a detailed statement of the necessary apparatus for the above size of pictures; but will give a few hints from our own experience. The lightest and most useful camera to-day, is the Fairy, made by our publishers; the best lens to use is the Dallmeyer; in the matter of dry plates, we have yet to see those that surpass the Stanley. For a tripod for good rough use, we should choose the new Triplex. A good portable dark room is unknown to us, and it is indeed hard to conceive a place where one cannot be extemporized when needed. As a dark-room light, we like the Tisdall candle lamp. This will be all that is necessary to get the plates in the holders and expose them. In the matter of developing, Cooper's soda developer, consisting of sulphite and carbonate of soda with pyro, is all that can be desired, and these can be carried in the dry condition for months before they are used, without deterioration. For dishes, the lightest and most convenient are those made of hard rubber; these can be used with all kinds of chemicals without any harm to the latter, except for toning, when we prefer a glass or porcelain dish. In the matter of printing and toning, the ready sensitized paper keeps well for some months and gives good results. Now, the quantity of plates, developing dishes, sensitized paper, etc., that it is necessary to carry, will entirely depend upon how many pictures it is intended to take in a day. We have given above the lightest and; in our experience, the best equipment for the purpose that we can think of.

*Q.*—A. C. J. writes:—What can I do to keep my sensitizing silver bath clear? Also what makes my albumen paper so yellow; it looks as if it was two or three days old? The bath was acid and I put in some ammonia to neutralize it. I dry my paper over a coal-oil stove. Boiling does no good.

*A.*—If you mean that your silver bath is



colored, make it slightly alkaline with ammonia, and set in the sun for a few hours, then filter and neutralize carefully with pure nitric acid. We think the trouble with your albumen paper comes from the oil stove, the unburnt oil causing a slight reducing of the silver. No oil lamp or stove that we know of produces perfect combustion.

Q.—F. D. B. writes:—Will you please inform me, through the columns of your BULLETIN, what is the cause of the edges of the stereoscopic mounts sticking and rubbing off in the burnisher, and how to prevent it? Also where I can get Bates' black varnish?

A.—The trouble with the mounts is probably due to a little of the paste that runs along the edges. Wipe the edges with a damp cloth before burnishing, and rub Castile soap upon the prints after they are dry and before burnishing. We do not remember the varnish that you name, but will try to find out for you.

C. H. S. writes:—Many thanks to you and Mr. Crehore for your courteous reply to questions in the BULLETIN of March 27th. I have received letters from several people, and a Mr. Blake informs me that it (negative made from negative) has been used in photo-mechanical processes, etc.

Q.—R. G. B. writes:—Can Anthony's enlarging camera be used with sunlight to make enlargements upon N. P. A. paper?

A.—Yes. See article on enlarging in this issue of the BULLETIN. All the parts that are essential to success are contained in the enlarging camera, and a little fixing to suit circumstances will readily adapt it to sunlight work. Of course, the printing will be very slow upon albumen paper compared with rapid printing paper.

O. W. M. inquires about the powder named in reply to C. & B., page 256 of BULLETIN. The powder named is, of course, bleaching powder; we were not talking of any other powder.

## Views Caught with the Drop Shutter.

MR. JOHN C. PATRICK, the well-known photographer of Batavia, N. Y., has been entertaining his friends at the Methodist Church there with a lantern exhibition of his pictures taken at New Orleans at the time of the exhibition. "A more complete and satisfactory entertainment of the kind could hardly be imagined," says a local report. We think many of our friends might follow his example with some profit.

GEO. S. NORTH, the photographer, of South Norwalk, Conn., was entirely burned out April 20th. He is said to be insured.

LOOK OUT! We have received notice that a couple of agents are fleecing some of our friends in Vermont and Northern New York by canvassing for orders for photographs, using samples of the work of the various studios, then decamping with the money and samples, leaving tickets to be redeemed by the photographers they claim to represent.

MR. G. CRAMER, of St. Louis, offers a handsome sum in prizes for pictures made from his plates at the Convention. See the Supplement to this issue of the BULLETIN.

MR. GEO. R. ANGELL also offers a prize to Michigan photographers, the conditions of which are given in the Supplement we issue with this number of the BULLETIN.

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# ANTHONY'S Photographic Bulletin.

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Prof. CHARLES F. CHANDLER, Ph.D., LL.D., *Editor*.

ARTHUR H. ELLIOTT, Ph.D., F.C.S., *Associate Editor*.

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MAY 22, 1886.

Vol. XVII.—No. 10.

## THE FADING OF PRINTS.

OUR able contemporary the *British Journal of Photography* has recently discussed this question in a very interesting manner, in connection with some observations upon well-preserved prints made during the years 1862-64. These prints were all produced during the *carte* mania, and they received no special treatment to insure permanency. Ordinary commercial paper was used, sensitized on a 60 or 65-grain bath, toned with acetate bath, fixed in fresh hypo of the usual strength, and washed for a couple of hours. The writer then says:

“The system followed was this. Each batch of prints as they were fixed were immersed in a dish of cold water, where they were kept in motion by hand for several minutes. They were then transferred one by one to another vessel. The first dish was then emptied, refilled with clean water, and the prints transferred back again, always singly, and with a slight draining. This operation was continued for about two hours, and with the last two or three changes warm water was always employed. The prints were then hung up to dry and afterwards mounted with gelatine.”

The plan usually followed now is then described; viz., washing in two or three changes of water and then the transfer to some automatic washing apparatus, where the prints are washed for hours; sometimes all night, and often from Saturday night to Monday. The writer now asks the question: “Is this prolonged washing advantageous to the pictures or otherwise.” A number of experiments are then recalled which were made some years ago, showing the influence of prolonged washing upon the permanence of photographs. As a result of these experiments, it was shown that beyond a certain limit (say four or five hours) continued washing caused a marked tendency to fading in the prints. In the dry prints those that had received the most prolonged washing were the first to fade. In fact by very long washing alone the fading began before the prints were removed from the water. A case is also cited where in warm weather yellow spots appeared if the washing was prolonged.

The above observations of our English contemporary again recall to our minds the wonderful tendency to decomposition that all animal substances like gelatine and albumen possess. Some years ago we were experimenting upon solutions of albumen, and no matter how carefully we purified the water in which we dissolved the perfectly fresh white of egg, in but a few hours decomposition had commenced.

When we were working upon these albumen-like materials, we did not then

know what we have learned more fully since, that is the influence of micro-organisms upon putrefaction and decomposition. These ever-present forms of microscopic life are undoubtedly the cause of many of the ills that worry the photographic printer; and we cannot too strongly impress upon him the importance of giving them the fewest possible chances to grow and develop. In the cases mentioned by the above writer, there can be no doubt that the continued soaking softened the albumen, and gave the bacteria in the water just the kind of material upon which they thrive. We feel satisfied that the yellow spots mentioned were nothing more or less than colonies of some special organism that were growing in the places where the spots appeared. Let it be always remembered that these organisms cannot grow without some albuminous material, water, and a moderate temperature. If the albuminous matter is dry, the germs of the bacteria cannot develop, while if the wet albumen is kept at a temperature near the freezing point of water, development of the germs of bacteria will not take place. We may appear to be carrying this germ theory a little too far in photography; but we can assure our readers that our own observations have impressed us so strongly with the importance of the subject, that we are constrained to call the attention of photographers to the presence of an enemy in both gelatine and albumen that is now engaging the attention of the best minds in the scientific world in other phases of its action, *i.e.*, the origin and development of disease.

We do not claim that the decomposition of the albumen is the only cause of the fading of silver prints. We have seen prints on plain paper that have faded. This is undoubtedly due to other causes, of which we shall speak at another time.

But the decline of the pure whites into dirty yellows in albumen prints, spoiling the brilliancy of the silver image by contrast, is often due to a decomposition of the albumen which was probably started during the process of washing.

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#### EDITORIAL NOTES.

DR. HENRY E. ARMSTRONG recently read a paper before the Chemical Society of London in which he noted the influence of light upon the character of chemical changes between organic bodies. Hitherto the attention of experimenters has been directed chiefly to the influence of light upon metallic salts, or these in conjunction with organic substances. But chemists are now directing their attention to the influence of light upon organic bodies when reacting upon one another. Dr. Armstrong showed that in quite a number of cases the compounds formed under the influence of light are entirely different from those produced when the action takes place in darkness. The compounds used in these experiments are of little interest to photographers at present, but we may expect some rich results from this line of research in the future. One experiment however deserves mention. In darkness, pseudo-cumene gives mono-, di-, and tri-bromopseudo-cumene when treated with bromine; while in sunlight it only gives the mono-bromide and afterwards (slowly) the di-bromide. This latter compound reacts with alcoholic silver nitrate, while the former does not. A development of this reaction may lead to important results to photography.

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At a recent meeting of the New York Academy of Medicine, Dr. H. G. Piffard showed a number of lantern slides illustrating the subject of skin diseases. Many of these slides were made by the doctor himself to illustrate his lectures,

and they showed in a most remarkable manner the convenience and accuracy of this method of instruction.

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PROFESSOR PICKERING, of Harvard Observatory, communicates to *Nature* an outline of the plan to be pursued in the work upon astronomical photography under the provision made for the Draper memorial.

"The whole face of the sky, from the North Pole to the parallel of 30 degrees south declination, is to be photographed in blocks of about 10 degrees square, the exposure occupying one hour. The telescope employed has an aperture of eight inches and a focus of forty-four, the object-glass being covered by a prism. The resulting spectrum of each star is about one centimeter long. Experiments are being made with a fifteen-inch telescope, with the object of representing the spectra of some of the stars upon a larger scale. To keep the astronomical public informed of the progress of the work, specimens of the photographs obtained will be gratuitously distributed from time to time, and the first distribution will probably be made in a few weeks. A blank form of request is attached to the circular, and may be filled up and sent to the Harvard College Observatory by any one desirous of receiving the specimens; but requests to the same effect in any form which may be convenient will also be cheerfully complied with, so far as may prove practical."

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WE have just received a copy of "Home Portraiture," the extra number of the *Amateur Photographer*. By the use of photo-mechanical processes, twenty-one reproductions of the pictures from the international prize competition, together with the details of how the various portraits were obtained, are given. It is a long while since we have seen such an admirable display of amateur photographic work, and would strongly recommend our amateur friends to secure a copy of this "extra," that they may see what can be done by careful photographic work and artistic grouping of subjects and surroundings. We have yet to see better work by amateurs this side of the Atlantic, and hope our American societies will be stimulated to produce something of this description in the future.

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WE have before us the plan of the Exposition Building at St. Louis, showing the spaces allotted to the various exhibitors. We note with much satisfaction that very few places remain unoccupied, and probably before this reaches the eyes of our readers all the available room will be taken. If there are any of our friends and subscribers who have not secured space and desire to do so, they should communicate with *Local Secretary* R. BENECKE, at St. Louis, at once. Remember! It is only a few weeks now and the great Convention will be in session. The BULLETIN is located near the entrance, where we shall be very much pleased to see all our friends on June 22d next. Don't fail to give us a call.

---

WE hear with deep regret of the death of Dr. JOHN F. WEIGHTMAN on May 6th. He was a member of the well-known firm of Powers & Weightman, the large manufacturing chemists of Philadelphia.

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WE give with this issue of the BULLETIN a letter from Dr. H. W. VOGEL, of Berlin. We are very much pleased to secure the use of his able pen as a correspondent from Germany, and can assure our readers that his letters will always be interesting.



THE Lowell Association of Amateur Photographers recently held an exhibition of the work of its members. Among those who exhibited pictures we note the names of Messrs. A. S. Guild, G. A. Nelson and W. P. Atwood. These gentlemen, together with Miss H. A. Whittier, had some of the largest exhibits and showed the best pictures. Miss Whittier was one of the first ladies in Lowell to take up the art; and, since she is an artist, her pictures show the influence of art feeling. Among the exhibitors we note Messrs. A. C. Sargent; Dr. M. G. Parker, G. E. Sull, C. E. Edson, W. M. Foster, C. H. Kohlrauch, J. D. Gould, F. H. Pullen, W. Taylor, J. I. Coggeshall and J. E. Rice. The other lady exhibitors include Mrs. C. J. Glidden and Mrs. C. E. Adams. The exhibition was a great success, and is calculated to greatly stimulate photographic work in Lowell.

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WE have to acknowledge the receipt of a very interesting pamphlet from Mr. FRED E. IVES, of Philadelphia, entitled "Isochromatic Photography with Chlorophyl," giving details of the history of his method of taking photographs of colored objects in their true tint-values. Later on we shall have something to say upon this interesting subject; at present we will only protest against the use of the word "Isochromatic," instead of "Orthochromatic." No matter how much we may be interested in the subject, we can never feel happy in the use of that meaningless word when applied to the matter under discussion.

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THE Cincinnati Camera Club has been reorganized as the Photographic Section of the Cincinnati Society of Natural History, and will meet at the Society's Rooms, at 108 Broadway, Cincinnati, the first and third Thursdays in the month.

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#### EXHIBITION OF THE PACIFIC COAST AMATEUR PHOTOGRAPHIC ASSOCIATION.

By W. B. TYLER, *Corresponding Secretary of the Society.*

(Continued.)

MR. W. S. DAVIS contributed some twenty whole-plate prints, mostly landscapes. His "Headwaters of the Sacramento" and "On the McCloud River" were excellent.

Dr. C. L. Goddard, a member whose acquaintance with photography only dates back a few months, exhibited several very creditable half-plate landscapes and marine views, and also a small vignette of a little girl playing with a kitten, which was extremely well done.

Mr. L. C. Clark showed several camping scenes, views at Lake Tahoe, and of Dartmouth College.

Mr. W. M. Speyer exhibited twenty 5 x 8 and whole-plate prints, embracing a large variety of work. His interiors were excellent, and were not marred by any trace of halation. His marine views and landscapes were all good, sharp and brilliant work, and the prints were well toned and handsomely mounted.

Mr. Sidney M. Smith's collection embraced some thirty 5 x 8 views, mostly groups and figure pieces. Mr. Smith is very happy in this class of work and his prints attracted attention.

Mr. Sanford Robinson being absent in South America, was only represented by one print, a 11 x 14 instantaneous view of turkeys and chickens.

Mr. Mark Requa contributed eighteen whole-plate prints, mostly landscapes and mining scenes. His "Water-wheel, Shasta County," was a gem.

Dr. S. C. Passavant was represented by a series of twenty-four 8 x 10 transparencies on plates of his own manufacture. These were made in the Doctor's usual careful style, and were beautiful and delicate specimens of this class of work.

Mr. George Tasheira contributed about sixty prints of various sizes and subjects. The printing and mounting was especially good. A series of views, 5 x 8, at Monterey, showed splendid composition and choice of subject, and the same may be said of a number of views at Provincetown and Salem, Mass. His "Italian Fishing Boats" was a very picturesque little bit, and in fact the entire collection did credit to the technical ability and artistic taste of the exhibitor.

Mr. A. J. Treat showed seven small prints on bromide paper. They were all pictures of children in costume and were entitled: "One Little Maid," "Yum-Yum," "The Coquette," "The Flirt," "Simplicity," "Innocence," and "A Merry Maiden." They were double-mounted on egg-shell paper and rough Chinese matting. The effect was novel and excellent. Mr. Treat has had remarkable success with these little studies, and the subjects, posing, and mechanical details were simply perfection.

Mr. F. H. McConnell is the great shutter-maker of the association. Full of good ideas, and always obliging and ready to help others, it has got to be a standing joke that "Mac" never had time to make pictures, as he was always busy helping somebody make a shutter. His exhibit, therefore, was a surprise to the members, as he contributed thirty prints from quarter and half-plate negatives. "En route," a half-plate print of a bicycle excursion, was very sharp and good, while his quarter-plate views in China-town were all excellent. A number of views mounted on circles, squares, palettes and ovals, and then tacked on to a large velvet panel, gave a pretty and novel effect.

Mr. E. R. Abadie showed eighteen 5 x 8 landscapes, mining and snow scenes, besides two portraits. His snow pictures were all crisp and bright, and were the result of correct and careful exposure and development. A portrait of Abadie, Jr., was extremely good.

Mr. S. A. Brooks contributed about two dozen prints, mostly 5 x 8, mounted on maroon panels and then remounted on large primrose-colored mounts. An instantaneous view of sail-boats on Lake Merritt, through the trees, was excellent, though a trifle over-toned. "A Chinese Junk" was sharp and brilliant. The mounting of this print was very neat, being on a small palette, which was tied by ribbons to a large panel. In fact Mr. Brooks had several new ideas in mounting. For example, on one panel were arranged three pictures, first mounted on small bevel-edge mounts and then joined together after the style of a Chinese puzzle. Some views on the Russian River were also very effective.

Mr. S. C. Partridge made a very large exhibit, some seventy prints in all, ranging from 4 x 5 to whole plate in size, and embracing various subjects and classes of work. Some snow scenes, showing the snow-sheds in the Sierras, were well done, as were also some views on the South Yuba. Several prints of the Grass Valley Mining Region were interesting and good work. The best work of Mr. Partridge, however, is shown in his cattle pieces. "The Noonning," "Defiance," "Idle Curiosity," and "Don't Care a Toss Up," were admirable specimens, and were thoroughly artistic pictures.

Mr. H. Loudon exhibited some twenty whole-plate prints from plates of his own manufacture. If the prints be taken as a standard, then Mr. Loudon's plates cannot be excelled by any plate-maker in the market, as his prints were all clear, bright and beautiful examples of landscape work. "Sunal Creek," "Lagunitas," and some views of the Northern Pacific Railroad were especially worthy of notice.

Mr. F. A. Blackburn's exhibit consisted of thirty-five landscape and marine views, all nicely printed and mounted. These were 5 x 8 in size and double-mounted on large light panels. "Alders at Blithdale" was a charming study, while several landscapes in Mendocino County and at Monterey were capital.

It would hardly do for the writer to dwell at any length upon Mr. Tyler's exhibit, which embraced over one hundred and fifty prints of all shapes and sizes. Not that he does not appreciate his own work, but he would prefer to have somebody else toot his horn for him.

One of the most interesting pictures in the exhibition was a 4 x 5 print made by the late Henry T. Anthony in 1859, and presented to the association by Mr. J. B. Wadesforde. It is an instantaneous view in New York Harbor, and is sharp and clear. A coasting schooner in the foreground is pitching her nose into a heavy sea, evidently made by the wake of the passing vessel from which the negative must have been taken. The exposure could not have been longer than the twentieth of a second. The print is a trifle dirty and faded, but full of interest to all photographers.

An old copy of Daguerre, presented by Mr. Weeks, was also of interest.

Mr. Partridge made a large display of apparatus, all of which was closely examined by our visitors.

We believe that this exhibition has advanced the cause of photography in California, and that it will be the means of largely increasing our membership and standing.

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### A SIMPLE APPARATUS FOR THE LIME LIGHT.

BY L. H. LAUDY, PH.D.

ALTHOUGH the preparation of oxygen at the time of consumption has from time to time been suggested, little attention has hitherto been given to this matter. Feeling that there was both room and need for a simple and practical method of generating oxygen as required for use in the lantern, I have been prompted to give the matter some little investigation.

The problem sought after in the construction of the apparatus to be described, resolved itself into an economical, efficient, durable, simple, and withal cheap and portable apparatus for the production of the oxy-calcium light. For this is a long felt want for use in enlarging upon gelatino-bromide paper, and for use in the lantern for the projection of pictures by an illumination far greater than that produced by any oil light.

While not claiming originality as a whole, I have rather correlated ideas and materials and put them into practical working order.

Some have unjustly laid claim to the invention of heating oxygen mixture in tin or metal tubes. I have taken pains to secure abstracts and references which, I hope, will set aside all doubts and give the honor to whom it is due.

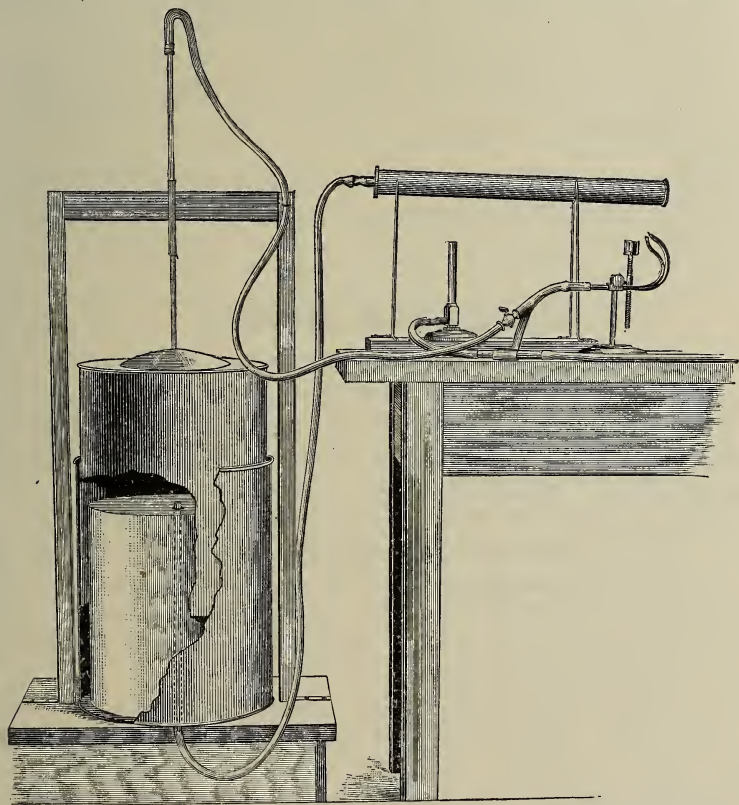
The usual method for the preparation of oxygen consists in mixing the in-



gredients and heating the same in metallic retorts, disengaging the entire amount of oxygen contained in the mixture at one heating. This necessitates the use of a large rubber bag or suitable receiver to hold the gas until required for use.

The first account I found of doing away with the gas bag was suggested by Mr. Noton, an Englishman, in 1868. He used several small retorts or tubes in which was placed plugs or cakes of the oxygen mixture, which could be heated and the gas disengaged in small quantities at a time. This apparatus was modified by Mr. Chadwick, and is now manufactured and sold in London.

In 1870, Dr. Andrew Smith published an article entitled "Oxygen Gas as a Remedy in Disease," in which, after describing the many methods that can be made to yield the gas, describes and pictures a piece of apparatus in which the



mixture of potassic chlorate and manganic dioxide is heated in a metal tube by means of a Bunsen burner or alcohol flame, heating only a portion of the tube at a time and generating the gas in small quantities, depending upon the amount of tube heated. This apparatus was manufactured and furnished to physicians for the preparation of oxygen, in 1877, by Mr. Beseler, of New York.

The apparatus, as shown in the cut, consists of three parts—a long tin or metal tube for heating the oxygen mixture, a small holder to produce a uniform pressure, and a blow-through jet. The gas-holder is not designed as a reservoir, and for that reason is small. That the weight may be reduced and the space utilized for packing, the holder has an inside drum with only half an inch water space, thus holding only a small quantity of water.

The tube for heating the mixture is made of tin-plate or sheet-iron closed at one end. The other end has a tapering plug of brass, in the center of which is a delivery tube; this can be driven slightly into the tube, and the whole is perfectly tight. It is heated by a Bunsen burner or alcohol lamp, beginning at the end nearest the delivery tube or plug.

The gas will be given off slowly, and passes into the holder and thence to the jet. As the holder descends, the flame of the burner is moved along the tube an inch at a time, thus keeping up a supply only as fast as the gas is consumed, and making it possible to generate gas for a few moments, or, by continued heating of the tube, enough for an hour's use.

Where house gas is not available, the ordinary oxy-calcium jet with alcohol can be used. With this apparatus all danger of an explosion is avoided, and the entire apparatus can be used at a moment's notice, either to produce the oxy-calcium light, to show experiments in oxygen, or for the use of the physician. The only adjustment necessary when used for the oxy-calcium light is that the house gas is regulated by a stop-cock, the oxygen being regulated by the opening in the jet.

The illustration shows the apparatus set up for operation, and needs no explanation. The house gas is conveyed by a rubber tube to the Bunsen burner, and also to the jet by means of a T branch, as shown in the figure.

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### THE LITERATURE OF PHOTOGRAPHY.

BY W. JEROME HARRISON, F.G.S.

(*Continued.*)

WILLIAM ACKLAND, surgeon-oculist, and a great authority on the use of spectacles, has long been connected with the firm of Horne & Thornthwaite, an old-established firm of opticians in the City of London. Mr. Horne was probably the first to introduce the collodion process commercially, in 1851-52.

1857. "How to take Stereoscopic Pictures: including a Detailed Account of the Necessary Apparatus, and a Minute Description of a Modified Collodio-Albumen Process." Post 8vo. Simpkin; and Horne & Thornthwaite, 121 Newgate street. 1s. Second Edition, 1857. 33 pp. 15 wood-cuts. Third edition, 1859, includes Fothergill's and Powell's Dry Processes. 49 pp.

1858. "Hints on Fothergill's Process." (Pamphlet, gratis.) Third edition, published in 1860. Horne & Thornthwaite, opticians, 121 Newgate street, London.

Fothergill's process was a method of obtaining dry collodion sensitive plates by slightly washing them with water, then flowing over them a solution of albumen and allowing them to dry. Powell used glycyrrhizine instead of albumen.

ANONYMOUS.—Very few good books on photography have been published without the author's names. Those which have so appeared are, for the most part, either (*a*) small books containing nothing new either in their matter or manner of putting it; (*b*) books written for and published by certain dealers in photographic apparatus, etc.; (*c*) a few books which are simply "cribbed" from other books.

1840. "The Hand-book of Heliography; or, the Art of Writing or Drawing by the Effect of Sunlight. With the Art of Dioramic Painting as practiced

by M. Daguerre." 16mo. 100 pp. Illustrated. Robert Tyas, 8 Paternoster row. 2s.

1840. Article on "Photogenic Drawing" in the Penny Cyclopædia, 4to, Vol. xviii, p. 113. Published for the Society for Diffusing Useful Knowledge, by C. Knight & Co., Ludgate street. 7s. 6d. per volume. Second supplement to above, 1858. Photography, pp. 504-507.

1843. "Photographic Manipulation." 8vo. Palmer. 1s. 6d.

1845. "Photography Made Easy. A Practical Manual of Photography, containing Full and Plain Directions for the Economical Production of Really Good Daguerreotype Portraits, and every other variety of Photographic Pictures according to the latest improvements. Also the Injustice and Validity of the Patent Considered, with Suggestions for Rendering such a Patent a Virtual Dead Letter, etc. By a Practical Chemist and Photographer." 12mo. pp. xii and 64. Paper covers. Mackenzie, 111 Fleet street. 1s. 6d.

The "patent" referred to is, of course, that of Daguerre, who patented his process in one country only—England.

1845. "Practical Hints on the Daguerreotype." (Willats' Scientific Manual No. 2.) Illustrated. Willats, optician, 98 Cheapside. 1s. Possibly by J. H. Croucher, who wrote another small manual of photography for the same firm.

1852. "Practical Photography." 12mo. W. M. Clark. 1s.

1853. "Hand-book Illustrating the Process of Photography." 12mo. Hamilton. 1s. 6d.

1853. "The Hand-book of Photography: Illustrating the Process of Producing Pictures by the Chemical Influence of Light on Silver, Glass, Paper and other surfaces, with Instructions for the Preparation and Use of the Materials Employed." 12mo. 91 pp. 14 wood-cuts. C. W. Collins, optical and philosophical instrument maker to the Royal Polytechnic Institution, Regent street. An "Appendix on the Preparation of the Chemicals, etc., employed in Photography" occupies the last forty pages.

1854. "Photographic Manual, No. 1." Whittaker. 6d.

1855. "Instructions in the Art of Photography." 12mo. G. Knight, optician, Foster lane. 2s. 6d. Knight's was a very old firm, dating back to about 1680.

1856. "The Secret of Coloring Photographs on Glass." De Lacy & Son, Sunderland. 1s.

1858. "Photography with Clean Fingers." Pamphlet. Illustrated. R. Jeffrey, Pittville, Cheltenham. The author advocates the use of certain forceps, more or less adjustable by means of a screw, to hold the wet collodion plates. A contemporary review cruelly remarks: "We should fancy the excitement of a good day's fishing tame in comparison with that of getting a plate out of a bath with these tools." (1)

(To be continued.)

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IT (the BULLETIN) contains most interesting matter and keeps us *au courant* with the doings of our photographic friends on the other side of the Atlantic.

E. DUNMORE.

*Honorary Secretary of the Photographic Club.*



## PHOTOGRAPHIC NEWS FROM GERMANY AND AUSTRIA.

(Continued.)

*What is Hydrazin?—Differences in the Results with the same Developer—Influence of Hypo on Development.*

LATELY a new developer has been discovered by Dr. Jacobsen. It is the so-called hydrazin, *i. e.*, the hydrochlorate of hydrazin,  $C_6H_5NH, NH_2HCl$ . It is produced from aniline. One part is put into ten parts of fuming muriatic acid. After cooling off, there is added to the soft mass of muriated salts, under good shaking, a 20 per cent. nitrite of soda solution (whereby finally a clear solution of diazochloride forms), until iodide of potassium starch-paper is colored distinctly blue. Hereafter, again cooling well, the determined quantity of chloride of tin, dissolved in a sufficient quantity of muriatic acid, is added. According to concentration, the tin double salt of the muriated hydrazin begins to form at once, or after the solution has been standing for a little while, to crystallize. It is purified by recrystallization, and the solution of the same, which also possesses strongly reducing properties, is mixed with alkali in excess, whereby the hydrazin separates as a solid or as oil. It is purified in a suitable and well-known manner. Meister, Lucius & Bruning, in Hoechts, are now occupied with the production of this preparation, so that it is accessible for everybody.

The patent specification says about its use :

A 4 to 5 per cent. solution of the salt in question is mixed before use with an equal quantity of an alkali solution, *i. e.*, 2 molecules hydrazin upon 1 molecule carbonate of potassium, that is, 14 parts carbonate of potassium upon 12 parts chlor-hydrazin. By application of the former, the solution will remain clear for a longer time and no free hydrazin will separate. This takes place only after a prolonged standing of the developer. But the solution can be made to keep when sulphite of soda solution is added, and light and air is sufficiently shut off.

Such a solution can be used for the development of negative plates and diapositives, until the reducing hydrazin has been exhausted.

But it is to be recommended that to recuperate the exhausted hydrazin before applying the solution for the development of a new plate, add a few drops of a hydrazin salt solution. Alkaline chlorides have, just the same as with other developers, a retarding action, so that by addition of bromide of potassium solution to the developer, the development can be extended at will. The developed plate is fixed in the ordinary way. The picture appears in less than a minute, and the development is finished in about four minutes.

The development of emulsion papers with hydrazin developers is very simple, similar to the before-mentioned description, except that the application of a restraining medium is not necessary. The paper is treated in the ordinary way after development.

The number of chemists who take any interest in photography is, so far, a very small one; if this were not the case, we might have many more new developers. But it is remarkable how many different results with the same developer and the same kind of plate are obtained by different hands. Mr. Gadecke cut an exposed plate in two halves, and gave one to Mr. Haberland and one to Mr. Graf, in Berlin, for development. Both developed with oxalate of iron, with addition of 2 drops of hypo, 1 to 200. While with Mr. Haberland's work of develop-

ment the first traces of a picture appeared in twenty-six seconds, and the development was finished in eight minutes and twenty seconds, the first traces of a picture appeared with Mr. Graf's development in four seconds, and the development was finished in five and a half minutes. This result appears so much more peculiar, as the temperature of Mr. Haberland's developer was 15 degrees C., and that of Mr. Graff, 8 degrees C. Mr. Haberland expresses the view that the thickness of the emulsion film has some influence.

The hypo addition to the developer (but only in the oxalate of iron developer, not pyro) finds much favor here. It gives, if not much higher sensitiveness, at least greater softness. It can be applied in different ways. The plate is put either in a very diluted hypo solution, 1 to 5,000 to 1 to 10,000, before developing (which I prefer), or a few drops of hypo, 1 to 200, are added to the developer. To the Society for the Progress of Photography in Berlin, Mr. Haberland has communicated the following results of his experiments.

1. Under normal plate sensitiveness, the preliminary bath is to be 1 to 5,000; for highly sensitive plates, 1 to 8,000 to 10,000.
2. The plates remain only from thirty to forty seconds in the preliminary bath, as a longer bath will easily give metallic fog.
3. If soda is to be added to the developer, then 1 to 3 drops of a strength of 1 to 200 are taken, according to the shorter or longer exposure of the plates, as both in the preliminary bath or when soda is added, the exposure is shorter than usual.
4. The plates treated with soda, no matter whether direct from the developer or the preliminary bath, resemble the wet plates nearest. Bromide of potassium is to be avoided if in any way possible.
5. Plates treated with soda will fix quicker than those developed only with oxalate of iron, and the bromide of potassium causes them to fix slower. One drop of bromide, 1 to 10, will stand easily 6 to 8 drops of soda, 1 to 200, without fogging.
6. Plates treated with a soda preliminary bath, or with soda addition (but without bromide), lose in the fixing solution, and have to be developed therefore so much stronger.

It is remarkable that by application of hypo the picture appears quickly, but with a thin appearance in the beginning, although it gains in strength rapidly afterwards under longer action of the developer.

HELIOS, *Dresden.*

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### LETTER FROM BERLIN.

BY DR. H. W. VOGEL.

*Development without Developer—The Wet Dry Plate—A New Style of Portrait—Van-Dyke Pictures and Sun Pictures of Loescher & Petsch—Painted Portraits in Lichtdruck by Pixis.*

If you ask me what is the latest news about photography in Germany, I must answer: The development without developer, and the wet dry plate.

It is certainly rather hazardous to introduce myself as your new humble correspondent with two contradictions of this kind, but I can prove them as right. And first, the development without developer is to be understood with regard to a new dry plate introduced by Schüller & Günther, in Berlin. This dry plate firm has taken a patent on plates which contain the developer; or, at least, part of it, *i. e.*, pyro. They mix pyro with the emulsion, and plates prepared therefrom are to be developed with ammonia or carbonate of sodium only; but Schüller & Günther also prepare plates which contain on the back the active part of the developer, *viz.*, the carbonate, so that they can be developed with water.

The addition of pyro to the emulsion is, of course, nothing new; it has been tried by me and others years ago, with success, to increase the sensitiveness of the emulsion;\* also by Jones; but whether such addition increases the durability of the plates, I should doubt. It is a fact that the pyrogallic acid changes gradually under the influence of the air and turns yellow, and then it will lose in reducing, that is in developing strength. The new plates brought into market by Schüller & Günther are very nice, but their durability can be proven only in the course of time. At present they have placed plates in the market containing pyro only. Whether the coating of the back with gum and carbonate of sodium can be practically executed without injuring the film side is another question.

Now as to the wet dry plate. It has been already affirmed by my friend Dr. Eder, and also by myself some time ago, that orthochromatic plates—for instance eosin plates—show their sensitiveness for red and yellow light considerably stronger in a moist condition than in a dry state. If no application was made of this fact, the reason for it is that the negatives taken upon the moist gelatine plates appeared perceptibly less sharp than upon the dry ones, and the reason for this is that the moist gelatine film swells considerably, thus being brought out of focus. Lately the wet azaline-gelatine plate has been applied with the greatest success by Mr. Obernetter, and a much greater sensitiveness of the same has been demonstrated by him, so that at present he uses only wet azaline plates, which he produces shortly before exposure by bathing in azaline solution (1 per cent). The sensitiveness is the same as that of the original emulsion. Emulsions containing little gelatine are of course best suited for this process, but if the following manner of operation of Obernetter is observed, other plates may just as well be used. They are moistened for half a minute under the tap; the superfluous water is allowed to run off; the color solution is poured on from one end to the other; the plate drained; then the color solution again from the opposite side as before, drained again, and then the plate is put into the drying box upon filter paper in a vertical position. When the solution is poured upon the plate, care must be taken that no bubbles form. The plate is held in the middle of the hand slanting towards the light, and the color solution is poured on as in former times the collodion was. After the plates have been drained from  $\frac{1}{2}$  to 5 minutes, and are then exposed, they show a greater sensitiveness than when thoroughly dry. In emulsion containing one-half of gelatine to one part of silver, the wet plates are not so sharp, on account of the swelling of the gelatine; still it generally does no harm. A concentrated solution of carbonate of ammonia (1 to 6) is preferred by Obernetter to the caustic ammonia as an addition to the coloring matter. It produces a far greater sensitiveness even for dry plates. To still further increase the sensitiveness, a very little hyposulphite of soda (1 to 1,000) is added to the color solution.

Obernetter works at present with the following solutions :

1. Oil paintings with much red—Azalin, 1 c.c.; erythrosin (1 to 1,000), 25 c.c.; carbonate of ammonia solution (1 to 6), 50 c.c. in 1,000 c.c. water.
2. High sensitiveness—Red neglected, but still effective. Azalin, 1 c.c.; erythrosin (1 to 1,000), 50 c.c.; carbonate ammonia solution (1 to 6), 50 c.c. in 1,000 water.

The plates are best developed with pyro and ammonia.



Now a third piece of news, without any contradiction, is concerning a new style of portrait, which will be of interest to you. I refer to the new Van-Dyke pictures of the old and renowned firm, Loescher & Petsch. They will be of double interest to your readers, as some will be exhibited at the St. Louis Convention. Louis Pietsch, our first art critic, is quite enthusiastic about these pictures, and as I might be suspected of being partial in the matter, I will let him speak.

He says in the *Vossische Zeitung*: "To each visitor at Loescher & Petsch's studio endowed with artistic sense and comprehension, the pictures taken from nature and studies from life he finds there must impart a high pleasure and great satisfaction, which is not unlike the one we enjoy in viewing the works of eminent artists upon the same field of portrait painting and studies from nature. Those remarkable likenesses of well-known personalities, to which has been given the well-suited name of Van-Dyke pictures, captivated me above all. They are produced partly in full figure, partly half or two-third size, with closed, pretty dark shaded background. The positions distinguish themselves by a plain genuine naturalness and pose characteristic to the original. Head and figure show their plastic form in contrast to the deep-toned background, from which even the lightest parts set off softly, while the dark ones shade off in true artistic style. Face and hands, whether in the light or covered by reflected light, are so thoroughly modeled; every characteristic form is precisely, and with such a richness of fine tones, worked out without showing the slightest hardness; the costume is so well reproduced in all its minute details; that these photographic pictures in their whole appearance actually remind one of the productions of that great master whose name they bear. I would draw particular attention to the unsurpassable picture of the artist, J. Jacob, in black Hollandish costume of the year 1600; the picture of the actor Kessler, looking at the picture of a female figure which he holds in his hand; the picture of the minister, in full figure, sitting at a table, really a work of art; and that of the reading boy in black velvet dress.

"Another remarkable specialty of this studio are the open air studies from nature, also some very charming genre pictures."

Loescher & Petsch have promised me that they will also send some of their sun pictures, of which mention was made before, to the St. Louis Convention.\*

That these pictures will not only find recognition among artists, but also in photographic circles, is proven by their reception in the Verein zur Forderung der Photographie. At the meeting of this society held on the 2d of April, these pictures were pronounced the handsomest photographic productions ever made.

The artist Herr Pixis, of Munich, showed samples of a very interesting combination of lichtdruck (Callotype) and painting. Mr. Pixis applies his process principally to portraits. At first a photographic negative of the subject is made, and from this an enlarged lichtdruck plate is produced from which a print is made. The latter is transferred upon canvas, or some other suitable material, by the lichtpaus process. Upon this transferred copy the artist works his colors without any particular care about any fine lines in the drawing or the shading of the pictures. Over this picture the lichtdruck is printed, communicating to the

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\*Through the kindness of E. & H. T. Anthony & Co., they have already been sent to St. Louis.

picture all the required details. Finally the picture is colored according to the taste of the artist. The pictures shown by Mr. Pixis were greatly admired. One of the portraits is upon leather, the other upon velvet. But the most pleasing of all was the reproduction of a drapery, which hardly differed from the original, having been made upon a material representing a similar texture.

I believe that this process will meet with favor in the United States.

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### POSTAL PHOTOGRAPHIC CLUB.

*To the Editors of the BULLETIN.*

So many friends of the Postal Photographic Club are included among your readers, that a few words by way of *resumé* of a year's work of the Club may prove of interest.

Started with 18 members just one year ago—its first album being issued April 28th—it has more than doubled in number; and from an issue of 19 poor prints on loose sheets at first, has grown to an average of over 60 per month, in albums regularly bound, and specially made for the Club. Number X, subject *Grotesquerie*, goes out in a day or two with 65 prints and 24 contributors.

The membership list of the society includes some of the most prominent amateurs from Maine to Virginia. Its object is primarily to assist the isolated amateur, by criticising his prints, answering his questions, and by showing him some of the best work of more experienced hands for comparison with his own. Its results have proven even more effective than those of the extensive exhibitions of amateur societies in large cities, as the best work of prominent amateurs is included while the number of prints is smaller, and ample time is given for thorough study. The fees are merely nominal, being \$2.50 for active and \$4.00 for associate members. These latter have all the benefits of receiving and studying the albums, but are not required to furnish prints.

The albums are sent from member to member by express, kept not exceeding three days (under penalty of a fine), and each one is encouraged to write criticisms in the note-books upon every print. Upon their return they are sent out again, that the members may have the opportunity of seeing all the other comments. The two best prints in each number are voted upon by the club, and at the end of the year, special albums containing these prize prints, together with the portraits of the club, are presented to the two members who during the year have obtained the greatest number of monthly awards.

At the annual election in March last, the following officers and Managing Committee were selected for the year ending April 1, 1887.

*President*, C. W. CANFIELD, New York City.

*Secretary and Treasurer*, E. L. FRENCH, Aurora, N. Y.

*Assistant-Secretary*, A. M. ZABRISKIE, Aurora, N. Y.

#### *Managing Committee.*

JOHN E. DUMONT, Rochester, N. Y.

FRED. A. JACKSON, New Haven, Conn.

CHAS. F. JANES, Providence, R. I.

MISS L. B. SALTER, Portsmouth, N. H.

Prof. R. SPAULDING, Montclair, N. J.

Up to the present time no prints have been issued which were not the work

of amateur hands, but it has been decided to accept from members photographs professionally *printed*, provided that the fact is so stated in the note-book, and the prints entered "for exhibition only," and not for competition. Also, owing to the increased size of page in the new albums, prints 8 x 10 inches will in the future be accepted. The list of members has increased so rapidly since the new year began, that it has been deemed necessary to limit. To this end the membership list will be closed at an early date, and thereafter no one will be admitted except to fill a vacancy in the ranks of the old members. As a warning to the present members who may contemplate bringing friends into the club, I may say that the limit will be most certainly and sharply drawn at the end of this month of May—the album of June 1st to contain the final membership list.

E. L. FRENCH, *Secretary P. P. C.*

AURORA, N. Y., May 1, 1886.

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### INFORMATION WANTED ABOUT DEVELOPMENT.

*To the Editors of the BULLETIN.*

THE development of negatives is undoubtedly the most interesting and the most important part of photography. As an amateur, I am constantly on the alert for information as to the best methods of procedure, and therefore I began to read with lively interest the report, in the BULLETIN of the 24th of April, of the discussion by the Society of Amateur Photographers of New York concerning the development of under and over-exposed plates. One speaker declared that of all the examples presented they knew absolutely nothing, and then said "it is as easy to make a good negative out of a twenty-second exposure as it is out of a two-second exposure"—and here I felt a tingle of satisfaction that I was about to have the best experience and practice fully demonstrated, for I have made a lot of exposures in the South the past winter, which, I believe, the light being more actinic than I had allowed for, are over-timed, and I want to know how to develop them to the best advantage. But imagine my disappointment when this worthy member sat down and gave nothing but a general observation that for over-exposed plates, a "weak developer" should be used! And the report also winds up with the assurance by the president that under-exposed plates should be developed with a "weak developer," only increasing its strength at the finish! Is it obtuseness on my part that I am not particularly enlightened by reading the report? What I would like to know is, briefly, how to develop an over-exposed plate—proportions of pyro and the alkali, kind and quantity of restrainer, and manner of procedure. I want density in the negative, to produce sharp contrasts, for effective lantern slides.

CAMERAMBLER.

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You certainly deserve great credit for the production of a paper (the BULLETIN) containing such interesting matter. The illustrations of photography and the allied processes are beautiful. Such is the opinion of all (and they not a few) to whom they have been shown. Wishing you every success.

J. F. HOUGHTON,

*St. Helens, England.*

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IN America this journal (the BULLETIN) takes the lead in the discussion of scientific questions in photography.—*The Amateur Photographer, England.*



## OUR ILLUSTRATION.

THE illustration which we present with this issue of the BULLETIN is remarkable for the sharpness with which it was caught, when we consider the speed of the movement of the object. A speed of thirty-five miles an hour means fifty-one feet per second, and it will be noticed that the wheels appear perfectly motionless, consequently the shutter must have moved with great rapidity to effect the result obtained. In a letter to us, Mr. Bull says :

"I do not claim that the picture possesses any particular merit—but it is hardly to be expected that much of any detail would be obtained in a picture of a piece of machinery moving rapidly and on which no focus could be had in advance—but is more of an exhibition of the rapidity with which the plate, lens, and shutter worked. The print represents a passenger train on the Old Colony Railroad, moving, as I afterwards learned, at a speed of from thirty to thirty-five miles an hour. It was taken on a day when the sun was obscured, on an 8 x 10 Stanley plate, with a 10 x 12 Dallmeyer rapid rectilinear lens (No. 3 stop) and Prosch shutter, the speed of which was accelerated by the use of a strong elastic. The train was in sight when I arrived on the ground, and I barely had time to set up my camera, get a hasty focus on the fence beside the track, and make the exposure. I had not even time to calculate how much of the train I would get on the plate, as I had made up my mind in advance to put the plate and lens to the severest test—that of taking the locomotive moving directly across the view.

"If any one claims that the Stanley plate and Dallmeyer lens does not work quick, there is a chance now to show something better."

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 THE SATCHEL DETECTIVE CAMERA.

THIS is an improved detective camera recently patented by Mr. Richard A. Anthony, and is certainly one of the most ingenious combinations of photographic devices we have seen for a good while.



FIG. 1. Camera ready for traveling.

In outward appearance, and to the ordinary observer, the camera looks exactly like an alligator hand-satchel that is carried by a shoulder-strap at the side of the pedestrian. (See Fig. 1). Upon closer observation, one sees that it consists of an artfully-concealed detective camera, in which all the various movements to

secure a picture are situated upon the under side. (See Fig. 2). For use the camera is held so that the base of the satchel rests against the body of the operator. By means of a brass pull at the side the shutter is set. A plate in

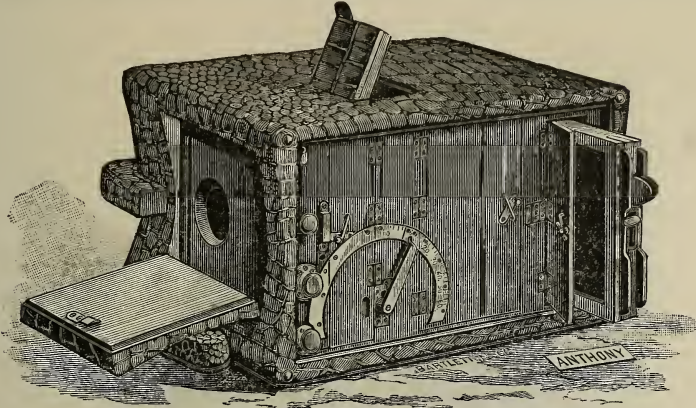


FIG. 2. Camera showing mechanism on under side.

the regular holder is placed in position at the back of the camera and the slide is drawn ready for exposure. The release of a short catch exposes the front of the shutter ready for action, and by raising a small leather-covered lid the little camera obscura called the finder, on the (now) upper side of the camera, shows the position that the object will occupy on the plate. (See Fig. 4). The slightest

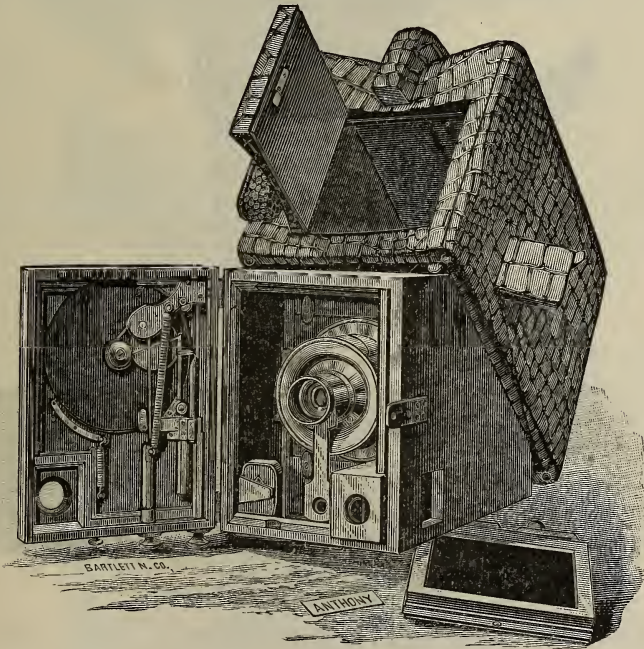


FIG. 3. Camera showing the detachment of satchel.

touch upon a small brass button releases the shutter, and the exposure is made. Replacing the slide in the plate holder, reversing the holder, and setting the shutter again, leaves the apparatus in readiness for another shot, when the plate-holder slide is withdrawn as before.



By removing a screw that takes the place of the spring lock of an ordinary satchel, the camera proper can be removed from its cover, and the screw removed serves to attach it to a tripod for ordinary use. (See Fig. 3.)



FIG. 4. Camera in action.

This last form of the detective camera allows the operator to carry with him twelve plates in the interior of the apparatus, and so carefully packed away that no light can strike them. It is also furnished with an ingenious attachment by which the speed of the shutter can be regulated to suit the speed of objects moving with greater or less velocity; while by simply releasing a catch, time exposures can be made at the will of the operator. In fact the whole affair is the latest achievement in ingenious and compact light photographic apparatus.

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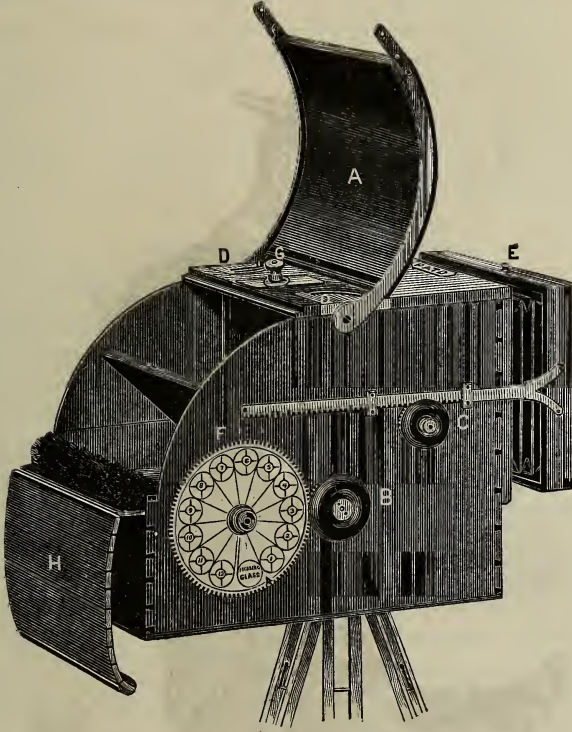
You evidently don't believe in half-way measures in your undertaking, whether in science or art; the beauty and artistic taste displayed in the "get up" of your BULLETIN affords striking evidence of this. I sincerely hope your enterprise will meet with the recognition it well deserves.

W. CLEMENT WILLIAMS,  
*Honorary Secretary of the Halifax Photographic Club.*



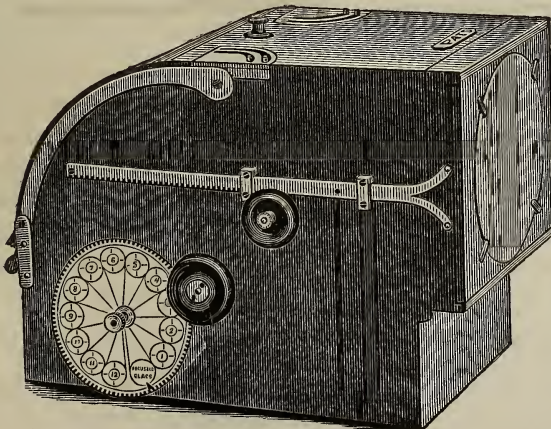
### ANOTHER NEW CAMERA FOR AMATEURS.

EVERY effort is now being made to lighten the burden of the amateur photographer during his travels. Glass negatives are being superseded by those on



EXPLANATION OF THE CUT.

A.—Cover. B.—Knob for raising plates (its companion will be found on the opposite side of the box). C.—Knob for actuating bellows (its companion on the other side of box). D.—Levers for actuating sectional shields, used only when making parts of plates. E.—Stop for lens front. F.—Index. G.—Lock for securing in position focusing glass and plate holders. H.—Slide.



CAMERA CLOSED.

paper, and all the various articles that go to make up an amateur's outfit are carefully constructed to reduce the weight of material to be transported. While these

improvements in the use of paper are going on, the use of glass for negatives still remains the most popular amongst amateurs, and every effort to facilitate its use should be noted. One of the latest improvements in cameras for using glass for negatives is the Acme Camera and Changing Box, cuts of which we give on page 307. This camera has been invented by an amateur photographer who has been much troubled with plate holders and their weight during his travels, and his efforts to do away with them have resulted in the production of a very ingenious camera and changing box combined. In the camera is contained one dozen dry plates, the ground glass, devices for exposing any quarter, one-half or the whole of a plate at will, a time shutter, and a rapid shutter.

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### A CONVENIENT ACTINIC LIGHT.

PHOTOGRAPHERS needing a strong actinic light for a short exposure will find the following process of obtaining one both simple and inexpensive.

Select a stout test tube—one  $4\frac{1}{2}$  or 5 inches in length, and not too narrow, will suffice—suspend it from an iron support by means of a wire twisted twice around the tube, with the ends of the wire left projecting so as to rest upon the ring of an iron retort stand. Fill the test tube three-fourths full of dry powdered saltpetre (either potassium nitrate or sodium nitrate will answer) and apply heat to the tube until the saltpetre is completely melted.

Continue heating until bubbles of gas are seen arising freely in the melted salt and then drop into the tube a pellet of roll sulphur half the size of a pea. The sulphur will ignite and burn without explosion, and with a vivid light possessing actinic power. When the sulphur has ceased burning, a second, a third and more fragments of sulphur may be introduced, and if the saltpetre be kept melted, each will burn with the bright light. Intense heat is developed and the glass tube sometimes melts at the surface of the fused salt and the bottom drops off. To prevent accidents from molten material, a tin plate should be placed under the tube when conducting the operation repeatedly. The odor arising from the burning sulphur is insignificant, because it burns to form sulphuric oxide and not sulphurous oxide. The melted mass contains potassium sulphate.

This experiment is familiar to chemists, and was proposed many years ago by a German chemist whose name is now forgotten. Lest the writer should be accused of claiming it as his own, he will conceal his identity beneath the pseudonym of the *first* chemist,

DJAFAR.

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ONE of the pleasant social events of the week was the marriage of Miss Carrie E. Seymour, one of Kent's esteemed and successful school teachers, and Mr. F. E. Poister, the well known photographer and artist. The ceremony took place on Sunday evening, May 9th, at the residence of the bride's parents on Harris street, in the presence of the immediate relatives only, Rev. E. B. Chase, pastor of the Congregational Church, officiating. The bride was made the recipient of numerous elegant presents. The contracting parties are popular young people of Kent and have a host of friends, who extend their good wishes for a happy and prosperous journey through life.—*Kent (Ohio) Saturday Bulletin*.



# ANTHONY'S Photographic Bulletin.

EDITED BY

**Prof. C. F. CHANDLER, Ph.D., LL.D.,**  
Aided by **ARTHUR H. ELLIOTT, Ph.D., F.C.S.,**  
and a corps of practical assistants.

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**E. & H. T. ANTHONY & CO., Publishers.**

## THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.

A STATED meeting was held Wednesday evening, May 5, 1886, with *Vice-President* JOHN G. BULLOCK in the chair.

The Secretary reported the receipt of communications from the Society of Amateur Photographers of New York, and the Boston Society of Amateur Photographers, in regard to the proposed plan of the three societies uniting in one general exhibition each year.

The suggestion having met with the approval of the New York and Boston Societies, and they having appointed committees to carry out the plans in connection with the Photographic Society of Philadelphia, on motion of Mr. Browne, a committee, consisting of Mr. John G. Bullock, Charles R. Pancoast and Robert S. Redfield, was appointed, with full power to act, to represent this society in arranging and carrying out such a plan.

The Secretary also reported the receipt of a pamphlet by Mr. Frederick E. Ives, entitled "Isochromatic Photography with Chorophyl," which was presented to the society by the author. A vote of thanks was tendered to Mr. Ives for the donation.

The resignation of Mr. Edgar W. Earle, to take effect at the end of the current fiscal year, was presented and accepted.

The Committee on Membership reported the election as active members of Messrs. E. F. C. Davis and R. Wistar Harvey.

The Excursion Committee submitted a plan for an excursion to Virginia, to occupy about one week's time, visiting the Natural Bridge, Allegheny Springs and such other points of photographic interest as might hereafter be decided upon. A plan was also proposed for a single day trip to New York Harbor. Members wishing to take part in either or both of the proposed trips were requested to so notify the Excursion Committee.

The paper of the evening was read by Mr. Charles R. Pancoast, whose subject was "A Convenient and Inexpensive Apparatus for Making Lantern Slides." [See next BULLETIN.]

Mr. Redfield asked whether it was necessary to shut out the light from the space between the lens and the negative in making slides.

Mr. Pancoast and others thought it better to do so, as the diffused light which otherwise passed through the lens, to some extent affected the brilliancy and clearness of the slide.

Mr. Wood stated that in making local reduction of over-intensity in a negative, or in removing light streaks from defective plate holders, or other cause, he had found that ordinary india rubber, as used for erasing pencil marks, acted very quickly and effectively. By cutting an aperture in a piece of paper and laying it over the negative, portions of the same of any size or shape can readily and quickly be reduced so as to soften high lights or intensify shadows in the print as may be required.

Mr. Galloway C. Morris thought this practically a modification of the plan proposed by him some time ago for local reduction by use of fine emery powder or other similar substances. India rubber prepared for erasing purposes contained diatomaceous earth, which supplied the grit necessary for reducing the gelatine film.

Mr. Redfield showed two negatives which had been affected in a peculiar manner in the fixing bath. On portions of the plate the bromide of silver, instead of dissolving out in the usual manner, remained in streaks and blotches, which dissolved very slowly, and when the whole plate was practically clear, these blotches in the film, apparently thicker than the other portions, remained quite visible by reflected light, and to some extent by trans-



mittel light. Four other plates from two other emulsions, developed and fixed the same evening in the same solutions, were entirely free from the trouble. The fixing bath was a saturated solution of hyposulphite of soda diluted with an equal bulk of water. Before fixing, all the plates had been passed through a bath of alum and sulphuric acid, and washed the usual time between the two baths. The alum bath was an old one, which had been in use for several months.

Mr. Redfield mentioned that he had once before had a similar experience with a single plate, from a lot which were of most excellent quality.

As an explanation of the trouble, it was suggested that after the alum bath the plates had not been sufficiently washed to remove the alum, so that sulphur from the fixing bath was precipitated in the film. It was also thought that the old alum bath may have acted on the film in such a way as to interfere with the action of the fixing bath in dissolving the bromide of silver.

Mr. Brown showed a print, which had been loaned him by a friend, from a negative made by Major Wallace F. Randolph, Fifth Artillery, U. S. A. The print represented the discharge of the new dynamite gun, with which experiments are being made at Fort Hamilton, New York. The exposure was made with an improved form of shutter, devised by Major Randolph; and, though taken in a direction at right angles with the line of fire, the projectile was visible. Its initial velocity was estimated at 900 to 1,000 feet per second, and its actual size was said to be three or four feet long.

Adjourned. ROBERT REDFIELD,  
*Secretary.*

## PACIFIC COAST AMATEUR PHOTOGRAPHIC ASSOCIATION.

REGULAR monthly meeting of the Pacific Coast Amateur Photographic Association, held April 15th, at the rooms, 313 Pine street. *President* LOWDEN in the chair.

Minutes of the last meeting read and approved.

The Exhibition Committee made their final report, and, after a vote of thanks for their services, were discharged.

All the bills incurred, amounting to \$120.58 were approved and ordered paid.

This uses up all the surplus cash of the association, but leaves it free from debt, and with a rapidly increasing membership.

The question of the exhibition next year was discussed, and it was finally decided to have a lantern evening some time in the autumn.

The report of the committee being favorable, Messrs. Treadwell, Treat, and Le Breton were duly elected active members of the association.

The following gentlemen were proposed for membership and referred to the committee: Messrs. H. L. Van Winkle, J. S. Cherry, and R. B. Dean.

Mr. Armes offered to present the association with a book-case, which offer was accepted with thanks.

Dr. Passavant presented the set of 24 transparencies exhibited by him, and a vote of thanks to the Doctor was passed.

Mr. Tyler proposed the name of Mr. Runyon as an honorary member of the association, and stated to the members that Mr. Runyon had kindly furnished the lantern used at the lantern evenings during the evening exhibition and had manipulated the same. That while Mr. Runyon was a photographer only so far as was necessary in carrying out his special study, microscopy—yet his knowledge and experience would always be at the disposal of the association.

On motion, the rule was suspended and Mr. Runyon was unanimously elected a member.

It was resolved to buy a 14-inch burnisher for the use of the members.

No other business coming before the meeting, on motion adjourned.

W. B. TYLER,  
*Corresponding Secretary.*

## PHOTOGRAPHIC SECTION OF THE AMERICAN INSTITUTE.

MAY 4, 1886.

*President* NEWTON in the chair.

The *Secretary* announced the receipt of the usual photographic journals contributed monthly to the Section, also a manuscript statement of the photographic history of the Lewis Brothers, by H. J. Lewis.

The Chairman of the Executive Committee announced that the programme of the evening was a stereopticon exhibition by the Lantern Committee, and a talk concerning the early daguerreotypists of New York City, with an introductory paper by the *Vice-President* of the Section. That the same subject would probably be continued at the next regular meeting, June 1st, together with such other matter as might be deemed advisable by the committee.

The following paper was then read by Mr. J. B. GARDNER.

*Mr. President and Gentlemen:* In our discussion on the "Early History of Photography" at the last meeting, we had time simply to restate the history of such writers and experimentalists as naturally lead up to the first development of the art, and its recognition by the leading civilized nations of the world. We now come to its practical introduction into New York City. And when it was first employed for its commercial value, Messrs. Draper, Morse, and Prosch had fully established the fact that it was a practical art, and predicted that the time was not far distant when it would be universally patronized, and that fortunes were awaiting all who should become expert in it. It was no wonder, therefore, that chemists and artists, mechanics and tradesmen, lawyers and clergymen, should abandon their old employments to better their fortunes in this new field of labor. But time has proven that seven-tenths of all this motley crowd failed in their adventure, and thus the art has drifted into hands who expect from it, at most, only a respectable means of living.

The first daguerreotype rooms (so far as we can learn) in the City of New York were opened to the public at the northwest corner of Chambers street and Broadway, in 1840, by Messrs. Walcot & Johnson, and on their cash book is recorded the first sale of a daguerreotype portrait in this city.

Some further particulars may be gleaned concerning this firm from an extract from a statement by H. J. Lewis to the photographic section, dated April 6th, 1886. This statement also gives a brief account of the Lewises, father and sons, in respect to their contributions to the art. Mr. Lewis says: "William Lewis, and William H. Lewis (his son) made the first camera used for taking likenesses as a business by the Daguerre process; also coating box, mercury bath, and head rest. These were first used by Walcot & Johnson on the corner of Broadway and Chambers street. \* \* \* These gentlemen charged for a picture on a plate 2 x 2½ inches, in a plain case, five dollars, and at this price these wonderful pictures were in great demand; but, owing to the difficulties attending an untried business, many times they were not successful in producing a shadow a day. Iodide of silver, though forming the basis of the picture, required some other agent to quicken the action of the light. These new beginners in what as yet was only an experiment, were not deterred

by difficulties. Having at times produced tolerable pictures, they resolved to find some agent to quicken and at the same time produce a more pleasing tone. To accomplish this they consulted with Dr. Chilton, a noted chemist in those times, and by his advice they were induced to experiment with chloride of iodine, which he prepared for their special purpose. With this, in combination with the vapor of iodine, they finally succeeded in making pictures in much less time and with greater certainty and success.

"They next tried to improve their work by producing more harmonious effects of light and shadow. Hence they cut a circular opening through the roof and built a circular room revolving on a railway at the pleasure of the operator. With these improvements they made their business a success. In the height of their prosperity, however, they sold out (to good advantage) to a Mr. Van Loan, whose son continued in the business for many years.

"They then went to London, where they engaged in the same business with a Mr. Baird, and were even more successful, if report be true, in the Old than in the New World.

"W. and W. H. Lewis continued making apparatus in a building on the corner of Elizabeth and Hester streets, which place they established in 1843, where they were honored with the patronage of the daguerreotypists throughout the country. All the demands for improved apparatus were supplied, and, as the business extended, they endeavored by increasing their facilities to meet its wants. At 142 Chatham street they carried on an extensive business forty years ago, and under varying circumstances continued in the business until Mr. Lewis, Sr. (my father), reached the age of eighty-six years." Mr. Lewis further says: "I have spent the greater portion of my life in this business, working for my father and brother and in conducting business for myself. My son, William H. Lewis, is a manufacturer and inventor at the present time of photographic apparatus, and my brother, R. A. Lewis, is, and has been, a portrait photographer for many years."

I cannot enumerate in detail the inventions and improvements due to the Lewis family; but I will say they have used their best endeavors in advancing the interests of the art. I think few will fail to thank them for their invention of the solid glass corner holder, the nitrate of silver bath holder, and the bellows camera, as each of these are in use wherever the photographic art is practiced.



During the same year (1840), Mr. J. Gurney says his attention, while engaged in the jewelry business, was called to the new art by Professor Morse, from whom he received in a pamphlet all the requisites for making the daguerreotype. He says: "I immediately employed an optician by the name of Roche, who made for me a lens, a camera box, a mercury bath holder, and a coating box for iodine. With these, and a small box of French plates, I commenced experimenting at my private residence, and thus soon convinced myself that I had so far mastered the art as to justify renting a room on the second story of the building 189 Broadway. My sign at the doorway was a frame of four small daguerreotypes, and the first I believe ever exposed for this purpose on Broadway. It was perfectly astonishing to see the multitudes who stopped to look at these pictures and one perhaps in a thousand would rush up-stairs to know something more about this new art. But it usually resulted in the knowledge, simply, that they went away with five dollars less in their pockets, in exchange for a shadow *so thin*, that it often required the most favorable light to detect that it was anything more than a metallic looking-glass. In fact people had to be taught how to look at the picture, or ten chances to one they could never see it. And it often happened that the operator himself failed to find a light in which it was visible. He might, perhaps, discover a shirt-bosom, but nothing more. This was a period in the art when it might be called interesting. Interesting I mean, when the fever of excitement and disappointment had passed away, and some new dodge had been contrived that might possibly obviate former difficulties. Here was a wide field for inventive genius—a school in which to learn patience, to exercise both the reason and the imagination, and to cultivate the organs of combativeness and secretiveness to their fullest extent. It was but a short time before chloride of iodine and bromine compounds were introduced. With these compounds we were enabled to make pictures in one tithe of the time required when iodine alone was used, and beside this, they were much more pleasing to our patrons. The art now began to grow rapidly in public favor. Taking this tide at its flood, I was soon assured of my financial success. And I spared neither money nor pains to establish my reputation in the art. That I did not labor in vain, is proved, I think, from the fact that my work was brought into competition with the work of the foremost men of the

times, and subjected to competent critics, who awarded to me, without knowing upon whom they were bestowing the honor, a most valuable prize offered by Mr. Edward Anthony, who was at that time, and who has ever been, 'the noblest Roman of us all.'

"So far as I know, it was the first prize ever offered for superiority in daguerreotype art. It was an expensive silver pitcher, with an engraved portrait of Daguerre on one side and Niepce on the other. During my photographic career, which is now some forty-six years, I have, to meet the demands of my customers, three times changed my place of business. I first moved to the corner of Leonard street and Broadway, then to 707 Broadway, and finally to the Fifth avenue, corner of Sixteenth street. Here I remained some four years, and then disposed of my place to my son Benjamin. I then went to Paris, but after a year or two I began to grow weary of the wonders of the world abroad, and hence returned to my own native city, where I resolved to spend the remainder of my life in the quiet of retirement. But this was a silly resolution, for one is never so unhappy as when deprived of his accustomed work. And now, though I have thrown off the responsibility of conducting business on my own account, I am content in finding quite sufficient to fully occupy my time in the profession of my choice, and in a gallery second, perhaps, to none in the world."

At the close of the reading, by request, Mr. A. BOGARDUS took the speaker's stand, and said :

*Mr. President, Ladies and Gentlemen:* I had no intention of speaking on this subject this evening, and therefore what I may say must be regarded as purely extempore. My first teacher of the daguerreotype art was George W. Prosch.

In November, 1846, I commenced business at the corner of Greenwich and Barclay streets, where I remained fifteen years. I then removed to Broadway, corner of Franklin street, where I remained ten years; then to Broadway and Twenty-seventh street; and after five years I moved to my present location (Broadway and Eighteenth street), which I have occupied for the last ten years.

Some of the early daguerreotypists I remember, were Messrs. Gurney, Brady, Lawrence, Becker, Piard, Insly, Weston, Horsley, Edwards, Anthony, Clark, Plumb, Lewis, Bogart, and Walsh. There were some few others, but I cannot recall their names at this present moment.

In those early years of the art there was no



time for idleness, and every man must row or be swept away in the rapids.

The diligent, however, were always rewarded for their labor, and could therefore reasonably hope to acquire both fame and fortune. Can such a hope be indulged now with our present scale of prices?

The daguerreotype required great care, skill, and expert manipulation; but when made right, it was the finest picture ever taken with a camera; and for durability, compared favorably with any other species of sun drawing since introduced.

But, Ladies and Gentlemen, I will not detain you longer, for I see in the audience an older, if not an abler soldier than myself—one who in the early days of the art was always in the front ranks and in the thickest of the fight, clearing the way for those that followed him. In my judgment he has made some of the best daguerreotypes ever taken in this country, or perhaps in any country; I hope, therefore, we shall now have a word or two from our venerable friend, Alexander Becker.

Mr. BECKER responded by saying that public speaking was quite out of his line, and he must therefore ask the indulgence of the audience if he attempted, in a conversational way, to relate a few facts respecting his early practice in the art.

It was in 1842 I took my first lesson of J. Langenheim, who at that time had daguerreotype rooms in the Merchants' Exchange, Philadelphia. In the spring of 1843 I removed to this city (New York) and brought with me the first large lens ever used here. It was intended for making pictures seldom called for in those early days of the art; but it was none the less useful in making the sizes most in demand, for it would take these more perfectly than the smaller lenses that were in common use. Thus a fact was demonstrated that many daguerreotypists soon learned to take advantage of, and though they might never expect to make pictures larger than  $4\frac{3}{4} \times 5\frac{1}{2}$  inches, they used lenses designed for  $6\frac{1}{2} \times 8\frac{1}{2}$  plates.

One of the first lessons I learned while in Philadelphia, was the necessity of having the temperature where we were working not below 60 degrees F., or above 90; and it was often no easy matter to overcome the difficulty. It was this difficulty that induced me to leave my first employer in this city. He, like many others in the business, could not understand why the temperature should interfere in making good work, and insisted on ascribing other causes for all kinds of failures.

With a temperature of 70 degrees F., and a strong light, I had little fear of being unsuccessful, even in those early days of the art; but in the absence of either of these, good pictures were the exception rather than the rule. The first daguerreotype work that I did in New York was for Mr. Edward White, who was in the business at 187 Broadway. After a brief engagement, I commenced business for myself at the corner of John and Nassau streets, where I remained till 1845. I then moved to 201 Broadway, under the firm of Langenheim & Becker; here I took the agency of Voigtlander's lenses and Louis Becker's chemicals. After a time the firm was changed to Becker & Piard.

After remaining some seven years at 201 Broadway, the firm moved to 264 Broadway. In 1857 I moved to 411 Broadway, the firm of Becker & Piard being dissolved in 1856. In 1859 I sold my business to Mr. A. Morand, and commenced the manufacture of my patent revolving stereoscope. In 1853 I devised a plate holder for making four pictures on a plate, so arranged that the exposed part of the plate should be in the center of the field of the camera.

The principle involved in this device was patented in 1856 by a Mr. Ormsbee, who claimed a royalty from the photographers, but was finally defeated by proof of my priority. I believe too I was the first who used (and after introduced to C. C. Harrison) a diaphragm between the lenses, and this improvement has now come into general use.

Defunct and buried with the daguerreotype art, rests in my garret, machinery for cleaning and polishing plates that quite eclipsed all hand work, and would no doubt have superseded all other methods then known, had not the collodion process at the time of this invention been publicly announced to the world. The practice of the daguerreotype art always furnished the most exhilarating stimulant for my inventive proclivities, and the thousand and one anxieties and defeats I then experienced are now only remembered as a pleasant dream.

At the close of the statements of Messrs. Bogardus and Becker (of which the above are only a part) concerning their personal history in the daguerrean art, it was announced that, owing to the absence of the Chairman of the Lantern Committee, Mr. A. D. Fisk had, during the progress of the meeting, been induced, by special request, to obtain from his photo stock house at 26 Beekman street, a choice collection of slides, and would endeavor to en-

tain the audience for the remaining portion of the evening.

Mr. A. D. FISK—*Mr. President and Friends:* Of a necessity the slides I have with me are not a complete set, having taken them promiscuously from my stock at the store in such haste.

The views I shall have the honor of showing you are scenes covering part of Mr. Edward Wilson's Oriental journeyings over the Peninsula of Sinai and Arabia Petra. Also some of our home views.

Pictures were shown giving styles of dress, manner of living, costumes and habits of inhabitants among the Peninsula and Arabia.

Very interesting were those giving the ruins of the old temples at Petra. Mr. Fisk in his description of these, said: "Mr. Wilson tells us that probably not over a dozen white people have ever seen Petra, and it was with great risk of life he succeeded in getting these views."

There were also many other interesting views shown, among which the following attracted special attention: The Well of Moses; Gathering Manna; the gate at the top of Sinai where St. Peter sat and took toll from all who went to worship on the Mount; the first passenger elevator; the manner of climbing the Great Pyramids; the roadway to Mount Sinai. The home views shown were those of Central Park and the Catskills; also instantaneous views of a kicking horse, and the explosion of Flood Rock at Hell Gate, all of which were photographed by Mr. Fisk. Mr. Newton showed a picture handed him by an amateur entitled "Whose fault is it?" It was a house rather inclined to be top-heavy, or the amateur must have been when taking the picture.

Mr. Mason also exhibited a slide representing the interior of one of his work rooms at Bellevue Hospital and made some very appropriate remarks concerning the importance of showing and explaining bad as well as good work—that we often profit as much by the faults of others as we do by their graces.

The entertainment was then closed by Mr. Fisk showing a chromatrope "Good Night."

The lantern used was made expressly for the American Institute by Mr. Beseler, who very skillfully worked it, and demonstrated beyond all doubt its excellent qualities.

A unanimous vote of thanks was given to Mr. Fisk for his very clever handling and explanation of the slides exhibited. After which, on motion, the meeting adjourned.

## THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.

ANNUAL MEETING.—*Continued.*

### *Abstracts from the Annual Report of the President.*

VERY little change has been made in the methods of developing dry plates during the past year; if anything, the adherents in favor of soda or potash as a fixed alkali are about even, inclining perhaps more in favor of potash for certain classes of work. Pyro appears to reign supreme; we hear very little of the ferrous oxalate developer, except for developing lantern slides and gelatino-bromide paper prints.

Sulphite of soda is acknowledged to be necessary to secure a good color.

Certain defects in plates, which were not in the emulsion, have been proved to be due to the wrong kind of sulphite salt. The granular sulphite, which is advocated in some formulas, has been shown to be bad. Pure crystallized sulphite, which contains more water, is known to be the best.

A recent decolorizer has been proposed, and is claimed to give good results; I have not yet tested it. I refer to meta-bisulphite of potash as advocated by Mawson & Swan, of London, England. It is more expensive than sulphite of soda, but a much smaller amount is said to be required to obtain a clear color in the negative.

The large number of camera shutters, etc., which have been shown here, shows that inventors in photographic apparatus have not been idle.

Progress has been made in specially preparing plates to be more sensitive to colors. It will take too much of our time to recall the great number of minor suggestions and improvements that have been made during the past year, hence I must pass on to our present condition.

We are now two years old as a society, and begin to feel as if we were of some importance. We have as good a membership as any one could expect for our age, both as to numbers and quality. We are harmonious, charitable towards our professional brethren, independent, fearless, respecting the rights of all, but at the same time preserving our special sphere of usefulness. We are bent towards one common end—harmony, and the improvement of our photographic knowledge; and lastly, we have no debts.

Our relations with home and foreign fellow



societies have been most cordial. This is made conspicuous by the fact that the newly organized London Camera Club in London, England, recently elected me as their first Honorary Member. I have also been elected an Honorary Member of the Minneapolis Amateur Society. These indications of the regard in which the society is held by others, should spur us on to higher attainments.

As we have been progressive in the past, it is befitting that we should strive to do better in the future, using proper caution not to progress too fast. As intimated to you last year, I believed that it was advisable to furnish larger and better accommodations for the society, realizing that they would become a necessity as our numbers increased.

With this end in view it was unanimously decided by the Board that we vacate the present premises and look for other quarters.

After spending two or three months in search of suitable premises, the Board concluded to accept the offer of two spacious floors in the building No. 122 West 36th street, near Broadway. These have been leased at a rental of \$900 per annum for two years, and will be our future home.

The increased rent we found was necessary, if we intended to carry out the objects of the society, as our present space was much too small. If sufficient money can be obtained, it is the intention to fit up the upper floor with commodious dark room, printing accommodations, a studio with sky-light and other accessories, using the first floor, but one flight of stairs from the street, as a meeting room, also for library and committee rooms.

It will be noticed the location is as central as our present place; that no elevator will be necessary, and, being close to Broadway, the rooms will be very accessible.

These advantages will undoubtedly tend to attract more members to the rooms, thereby encouraging a greater social intercourse among them, a point which heretofore has been neglected.

It is well known that there is really no good place in the city where an amateur beginner can go to get instruction, and it will be the endeavor of the incoming Board to provide something of this kind. It is proposed in different ways to cater to the needs of amateurs, and, under proper regulation, to rent out instruments to beginners, and loan lanterns for private exhibitions, with slides.

To do these things we need more money than we now have in the treasury, and I trust

all the members who feel able will come forward and do something towards the accomplishment of our purpose.

I have reason to believe that liberal donations, in the shape of apparatus and the like, will be made as soon as we are ready for it, by our friends, the stock-dealers and manufacturers.

Whatever faults and failings I have shown as your presiding officer, I sincerely ask you to overlook, for no one has been more conscious of them than myself. I thank all of you for your courtesy and kindness towards me. I now, and have always, felt a deep interest in the success of the society, in the objects for which it was started, in the good it ought to accomplish, and have labored assiduously to promote its welfare.

In drawing together so many cultured and honored gentlemen, and in receiving their support in such a praiseworthy cause as we now have in hand, I feel well repaid for the labor and trouble I have expended. I believe we are all united in pushing the society forward, with the hope that it may become the best and foremost in this country.

I cannot close without expressing my thanks to my fellow officers and directors for their kindness, forbearance and consideration towards me, and for the good counsel and assistance they have invariably given me. The society owes much to them for their fidelity and service in its interests.

My hope is that the society will continue to flourish and prosper; that every member will take an uncommon interest in its welfare; and that, finally, we shall continue to be proud of it and what it has done.

On motion, the report was accepted and ordered to be placed on file.

The next matter brought before the meeting, was the election of a new Board of Directors.

Mr. BEACH—In accordance with the terms of the constitution, a nominating committee was appointed, and their nominations for the Board of Directors for the ensuing year you have all received notice of. One of the gentlemen, Mr. R. A. C. Smith, however, requested that his name be withdrawn, and at a subsequent meeting of the committee, Mr. John J. Wilson was substituted in his place.

The names on the ticket were then read.

On motion, the Secretary was instructed to cast the ballot of the Society for the following Directors:

Frederick C. Beach,  
John H. Janeway,



Henry V. Parsell,  
Casper W. Dean,  
John T. Granger,  
Frank G. DuBois,  
John J. Wilson,  
C. Volney King,  
Robert Baker,  
Dexter H. Walker,  
Allen S. Apgar.

The chair declared the ticket unanimously elected.

MR. BEACH—I believe that the Lantern Slide Committee has something to report. The Secretary read the following

REPORT OF THE LANTERN SLIDE COMMITTEE.

*To the Society of Amateur Photographers of New York.*

MR. PRESIDENT,—Your Committee on Lantern Slides desire to make the following report on the proposition to establish an annual exchange of lantern slides with the London Club.

*First.*—That the Philadelphia Amateur Photographers' Club, the Boston Society of Amateur Photographers, the Photographic Section of the Cincinnati Society of Natural History, and this Society combine on an equal footing for the purpose of collecting, annually, two hundred lantern slides, and exchanging them for a like number with the London Camera Club.

*Second.*—That, in pursuance of the above, each of the four societies first mentioned contribute at once one hundred lantern slides to the general American collection.

*Third.*—These may be of any subject; but those illustrative of American home-life and scenes are preferred.

*Fourth.*—That the proper committee shall select from this collection two hundred of the best slides, returning the balance from whence they came.

*Fifth.*—That the selected slides shall be shown before each of the affiliated societies before shipment to England.

*Sixth.*—On receipt of the slides from the London Camera Club, they shall be successively exhibited at New York, Boston, Philadelphia and Cincinnati, under the auspices of the amateur clubs of those cities, and then divided into four sets of fifty slides each, one set each to become the property of the Boston Society of Amateur Photographers, the Photographic Section of the Cincinnati Society of Natural History, the Philadelphia Amateur Photographers' Club, and the Society of Amateur Photographers of New York.

*Seventh.*—That the Lantern Slide Committee of this Society have full supervision respecting the shipment and receipt of slides to and from England.

(Signed) P. H. MASON.  
F. C. BEACH.

RULES ADOPTED BY THE LANTERN SLIDE COMMITTEE.

Supplementary to the above report, your committee desires to suggest the following rules for the benefit of this society:

1. That any slides becoming the property of the Society of Amateur Photographers of New York, as resulting from exchange with the London Camera Club, shall be under the control of the Lantern Slide Committee, and shall be loaned, at the discretion of the committee, for private exhibition to any member of this Society who shall have contributed to the exchange five or more accepted slides.

2. The member so accommodated shall be held responsible for the slides while in his possession, and shall return the same within the limit of time provided by the committee.

On motion, the report and rules were unanimously adopted, and ordered to be placed on file.

MR. BEACH—I received a letter to-day from one of our Directors, Mr. C. Volney King, who has been absent from this city for some time. He writes from the City of Mexico, and says: "I am having a very pleasant and interesting trip, and if I succeed in taking my plates home without breaking, will hope to show you some good pictures on my return."

At our last Board meeting the question of the consideration of the proposition of the Photographic Society of Philadelphia respecting the holding of a grand exhibition once in three years, in which not only amateurs, but professionals may join, was discussed. These exhibitions are to be held one year in Philadelphia, another year in Boston, and another in New York.

The Board appointed a special committee to investigate this matter, with instructions to report upon same at this meeting. Mr. Dean will read the report of the committee.

REPORT OF SPECIAL COMMITTEE ON JOINT EXHIBITIONS.

*To the Society of Amateur Photographers of New York.*

MR. PRESIDENT,—Your special committee, appointed from the Board of Directors for the purpose of taking into consideration the matter of joint exhibitions by the Photographic

Society of Philadelphia, the Boston Society of Amateur Photographers, and the Society of Amateur Photographers of New York, desire to report:

1. That they are favorable to an arrangement by which the three societies mentioned can unite annually in holding an exhibition.

2. That they suggest that a special committee be appointed by the President to confer with committees already selected from Philadelphia and Boston, for the purpose of framing such rules and regulations as may be necessary for the proper government of said exhibitions.

3. Your committee further suggest that the next united exhibition be held in Boston in the autumn of the current year, under the auspices of the Boston Society of Amateur Photographers, and in New York in 1887.

FRED'K C. BEACH.  
JOHN H. JANEWAY.  
C. W. CANFIELD.

Mr. BEACH—In reference to the presentation prize print exhibition, I wish to call your attention to an exhibition on the wall of what I call choice pictures. There are, I believe, some eighty-four prints and one transparency. The judges I have appointed are Mr. F. Rondel, an artist, and Mr. Theodore Gubelman, a photographer. They have, as yet, arrived at no final decision, but will decide in a few days. The exhibition of pictures will be kept open here to-morrow afternoon, April 14th, from 2.30 to 5.30, and in the evening from 7.30 to 10.30. If any of you desire to bring your friends to see the pictures, you are perfectly welcome to do so.

I am requested to call attention to the reduction in postage rates on photographs. The rate was formerly 1 cent an ounce, but is now 1 cent for two ounces. I also have a letter from Mr. W. H. Gilder, our first Vice-President, in which he says that his change of business compels him to resign from the society.

Mr. Dean then read the letter, and Mr. Gilder's resignation was accepted.

Mr. BEACH—Mr. Dean will now read a proposed amendment to the Constitution.

Mr. Dean then read the following:

“*Resolved*, That Section 2, Article 6, of the Constitution, be amended to read as follows: The Board shall hold regular meetings once in every month, and five members of the Board shall constitute a quorum for the transaction of business.”

Mr. BEACH—I have sent out a series of letters to the different manufacturers of dry plates, for the purpose of getting copies of their latest formulas, and it may interest you to know that one man out in Rockford, Ill., has taken the standard formula which the society adopted last year, and advises his customers to use nothing else, saying that it gives the best possible gradations.

Mr. Carbutt has been kind enough to bring with him a round illuminated colored almanac, which some of you may have seen, and in connection with this has brought two prints, one made from a negative on an ordinary rapid plate, and another printed from a plate prepared specially to make it more sensitive to colors.

Mr. Carbutt is present, and will give us some information.

Mr. CARBUTT—*Mr. President and Gentlemen:* My object is simply to illustrate what can be done by the use of the new orthochromatic plates to get harmonious results from a subject which has a large variety of colors and tints. This is, of course, a mere experiment. [Passing pictures round.] The center, you will observe, has a dark ochre color. In one of the plates it is so dark that you cannot see the lettering. In the other the lettering is all distinct and legible. Again, on the right of the picture are daisies with yellow centers. You will here see the difference between the orthochromatic and the other plate, which you will find is covered with little black dots. It is a plate which has just come into use, more commercially than generally, although I believe it can be made good use of, and be very useful in making pictures in the autumn, where browns and reds and greens and yellows appear; and I think by the use of these plates you can get finer gradation and more distinct leaves.

At present they do not possess any great rapidity. One is taken on my rapid plate, and one with a yellow color screen placed at the back of the lens, which reduces the exposure considerably, and has the effect of holding back the black tints.

Mr. BEACH—Is there any special way of preparing these plates?

Mr. CARBUTT—I have had to make a great many experiments. I commenced last fall. I tried to follow out the instructions printed in some of the journals, and, although I followed them closely, I failed to get the same results as the author. But in the last two months I have spent a great deal of time, and made a great many experiments.



There was a gentleman came to my factory last Saturday. He is a commercial traveler, and knew little or nothing about photography. He took four plates, and although he used up two in getting his time, he made two fine negatives; everything was brought out with perfect gradation of colors: orange, purple, blue, dark red, and a very dark green.

MR. BEACH—Is there any difference in development?

MR. CARBUTT—They develop rather slowly, and require more time.

MR. BEACH—What do you think is the difference in time between these and ordinary plates—two, three or four times?

MR. CARBUTT—About six times.

*A Member*—Do you think you can get the same results in all the other colors as in yellow?

MR. CARBUTT—You do in accordance with the color screen you use. There [pointing to the photograph] I used a yellow screen, and the yellow is more sensitive than the red.

*A Member*—Do you think that the plates will retain their peculiar quality?

MR. CARBUTT—That is a question I am not prepared to answer. I see no reason why they should not. Some that I have prepared several months ago are in as good condition as ever.

*A Member*—Are you at liberty to say whether it is a mineral or vegetable color?

MR. CARBUTT—It is vegetable.

MR. BEACH—I believe Mr. Newton has something to say.

MR. H. J. NEWTON then spoke of an experiment he had tried in strengthening the underexposed portion of a negative. He had a fine negative of some swans on a lake in Central Park, but the day having been cloudy, while he was able to secure sufficient density in the water and swans, he was unable to bring up the dark-brown foliage on the banks to good printing strength. He said: It occurred to me that I might redeem the negative or reconstruct it. I don't know as the process is anything new. I don't remember of hearing of anything exactly like it. I rubbed the part where the swans and water are with castor or machine oil; rubbed it on with my finger so as to protect it thoroughly from the action of any liquid which might be put upon the plate. Having done this, I placed the negative in a solution of iodide of mercury; in other words, an intensifying solution.

Of course there was no action upon the swans or water. After it was strong enough, I then immersed it in hypo, and then with alco-

hol and a tuft of cotton cleaned the oil off, and the negative was in good shape to make a good print.

This was the method I adopted to redeem a negative made on a cloudy day, to make the landscape, which had not been exposed enough, be in harmony with the water, and I thought perhaps some of you might some time be caught in the same way, and a very good negative and one that you could not get again for another year could be saved by this process. In case certain portions of the negative are too dense, the thin parts can be protected by oil in the same way, and the dense parts be reduced with perchloride of iron, or by the well-known ferricyanide of potassium reducer.

Referring to the previous negative, he continued:

Had I undertaken a development which would have given sufficient strength to the background, I would have spoiled the negative, so far as having any detail in the water or in the swans is concerned, but by stopping the development when any particular part is strong enough, and then strengthening up the other parts, you can make as good a negative on a cloudy day as you can on a clear day. (Applause.)

MR. BEACH—I wish to speak a word for the House Committee in connection with their labor on the Presentation Print Exhibition. Its chairman, Mr. Walker, has used every endeavor to make it a success, and has been ably assisted by Mr. Baker, who has put in his time in forming the handsome frame around and the background behind the pictures. I think they deserve a vote of thanks.

A vote of thanks was accordingly tendered the above gentlemen.

DR. JANEWAY—I have another motion to make, that a vote of thanks be made to the Scovill Manufacturing Co., and Messrs. E. & H. T. Anthony & Co., for printing the Proceedings of the society's meetings.

Vote of thanks was accordingly tendered.

MR. BEACH—I am pleased to say that we have with us to-night a gentleman well known in England, who, as some of you know, is author of one of the best books on the magic lantern, a copy of which we have in the library. I will introduce to the society Mr. W. I. Chadwick, of the Manchester Photographic Society.

MR. CHADWICK—*Mr. President and Gentlemen:* I am very much pleased to be at your meeting to-night. I would have been much more pleased to have remained silent, and not



have been called upon to talk, but I know that if a member of your society should be in Manchester, I would be the first to ask you to say something. I knew it was your annual meeting, and did not come prepared to say anything photographic. Photography opens a large world of subjects, and a large field for discussion. You know there are a great many branches, and to talk without a subject is rather difficult. At least so I thought until a short time ago, when a lady came to England from America, who said that she could talk a half-hour on politics, and three-quarters of an hour on any subject that should be proposed. I thought that was very clever, and concluded that I would like to hear her; so I started out. On my way I met a friend, a married man, who by the way has a good many children. I said I would like him to hear her.

He asked me what subject she was going to lecture on. I told him that this was to be decided by the audience.

Then he said, "She has a subject?" I replied, "Yes, she has, after the audience has decided." Said he, "I see nothing difficult in that. Come home and I will show you a wife that can talk two hours without any subject." (Laughter.)

I have had some little experience in the direction of photography. Our photographic society is the second oldest in the world, but as I say, though I have had some little experience, I am never too proud to learn. There are one or two things here which strike me as being different from what they are on the other side. Now, for instance, you call the roll of your members, and mark whether they are absent or present.

The way we do it is this: We have a list of the members, and as they come in they mark their names on the list. I simply suggest that by this method the members could sign their own names, and thus save time.

There seems to be an impression here that our societies are great on having teas, and that the Englishman is very fond of his beer. There is no such thing as that about it. We like to encourage the amateurs at our meetings. They are sometimes quite timid about getting up and speaking—at least I know I am, especially where I am not very well known. We open at seven o'clock with a formal council meeting, which is quite as formal as anything you ever saw—sometimes too formal perhaps, at which the business affairs of the society are discussed. About 8 we all have tea, bread and butter, etc., and

during this tea there are a great many amateurs who have good results in their pockets which they are too timid to bring up to the desk, but will show them to the next person at their side or across the table, and can often give good information. Unless young members will bring forward their results and exhibit them, the whole responsibility of the meetings rests on the shoulders of a few of the older members. After the tea, at about 8.30, the general photographic meeting begins, lasting, perhaps, a little over an hour. Each of our members have the *British Journal of Photography* furnished them by the society. We thus have not only a report of our own proceedings, but your proceedings, and every one's proceedings, and we read these and are of course prepared to say something at our next meeting.

The lantern, of course, is an important thing with us. We have found it convenient to extend our meetings to two meetings in the month. That is, one photographic and the other a special lantern meeting.

These are public meetings, and every one can bring his wife or his sister or his sweetheart, and I think we have an average attendance at these meetings of from five to six hundred.

(To be continued.)

## What Our Friends Would Like to Know.

Q.—M. P. & Co. write:—What is the lime light, and how is it produced? What is the difference between chromate of potassium and bichromate of potassium?

A.—The lime light is the light obtained by heating a piece of quick-lime until it is white-hot in an oxy-hydrogen blow-pipe. See the article in this issue of the BULLETIN by Dr. Laudy. Bichromate of potassium contains just twice as much chromic acid as chromate. The bichromate is an orange-colored salt, while the chromate is lemon-yellow.

Q.—G. F. B. sends two negatives and writes:—Will you please inform me through the columns of the BULLETIN what is the cause of these blemishes?

A.—We are not quite certain how these markings are produced; but think they are caused by thin strips of glass chipped from the edge of the plates in coating a number of them placed end to end.

Q.—C. A. N. writes:—What is the best and cheapest lens to buy for general use, instantaneous out of doors, views, groups, etc.?

A.—The best lens is undoubtedly the Dallmeyer Rapid Rectilinear; if this is too costly for you try the Platyscope, which you will find an exceedingly fine lens for the work you mention; but for our part we should choose the Dallmeyer, as we believe it is cheapest in the end from the comfort and pleasure received while using it.

Q.—R. A. writes:—Please inform me through the columns of the BULLETIN at what distance apart it is best to mount stereoscopic lenses?

A.—For a 5 x 8 plate they should be three and five-eighths inches apart from center to center.

Q.—A. W. N. writes:—In the last issue of the BULLETIN, I noted an article where C. & B. asked the question to inform them how to produce blue or gray tones, and your reply was to use a bicarbonate of soda toning bath, by adding a few drops of bleaching powder solution. Now what I would like to know is what is the name of the bleaching powder, or what kind of powder have you reference to?

A.—Bleaching powder is the commercial name for chloride of lime. It can be obtained at any drug store under either name. The active principle in it is hypochlorite of calcium, which decomposes on exposure to the air; therefore take care that the package you buy is a tight one, and always use the powder from a fresh package to make the solution; it only costs a few cents a package, and it is not worth while to risk spoiling your prints for such a trifle.

*Reply to W., N. & Co. about Electric Light Printing.*

Noticing in the BULLETIN an inquiry as to whether any parties had used the electric light for direct printing, I would say that I have on several occasions done so very successfully. I did it simply to get proofs, but they were printed, I should think, in less time than if exposed to the sunlight, and they had every appearance of possessing every quality to give a nice tone. I printed the proofs by aid of a Weston arc lamp, the illuminating power of which was increased slightly for the occasion, holding the printing frame about two feet distant, with a plate of ground glass between.

HENRY BULL, JR.

### Views Caught with the Drop Shutter.

A FIRE which originated in the rear of the Waverley Hotel, New Orleans, damaged McClure's photograph gallery on Sunday night, May 10th. We are glad to note that the damage was fully insured against.

J. C. SOMERVILLE, formerly of 1009 Olive street, St. Louis, has removed to 111 North Broadway in the same city.

ZIMMERMAN BROS., of St. Paul, Minnesota, have just issued a handsome quarto catalogue of photographic materials, and we are very glad to have the copy which they sent us, and tender our best thanks for the same.

We enjoyed lately a pleasant call from Mr. H. REIMERS, of the new firm of REIMERS & KATZ, of Milwaukee, Wis. They have a large lot of our publishers' fine apparatus, etc., and we wish them much success.

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NEGATIVE ON THE STANLEY DRY PLATE  
MADE WITH DAL MEYER'S A-10  
RECTILIN 100 11 11

# Trotting Horses.

Hotting to Central Park, New York City.

Copyright 1900 by J. A. PINE EXTRA  
MADE IN ALBANY N.Y.

# ANTHONY'S Photographic Bulletin.

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Prof. CHARLES F. CHANDLER, Ph.D., LL.D., *Editor.*

ARTHUR H. ELLIOTT, Ph.D., F.C.S., *Associate Editor.*

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JUNE 12, 1886.

Vol. XVII.—No. 11.

## THE USE OF THE HYDROMETER IN PHOTOGRAPHY.

IN every process of manufacturing that involves the making of solutions of salts of known strength, or where it is necessary to mix and dilute solutions to a given value, the hydrometer is the most useful instrument to place in the hands of the operator. This is pre-eminently the case in chemical manufacturing, as well as in pharmacy and the compounding of alcoholic beverages; and it has often been a problem with us why the photographer does not use the hydrometer to assist him in mixing his developers and other solutions. Perhaps the neglect to use such a useful instrument may be put down to the fact that few photographers stop to think of its merits. As a simple statement of the principles upon which the hydrometer is constructed and works, and a few indications of its manner of use may prove interesting, we have thought it worth while to call the attention of our readers to the subject.

The hydrometer consists of a glass tube with two bulbs near one end, the lower one being loaded with shot or mercury. It is so constructed that when placed in water it will float in a perpendicular position, which essential function is secured by the shot or mercury in the lower bulb. The principle upon which it acts, in determining the specific gravity or comparative weight of a liquid referred to water, is one which was discovered by the Greek philosopher, Archimedes, that a solid body placed in any liquid will sink in that liquid until it has displaced its own weight of the liquid. The hydrometer, therefore, must be of such a form that it will float in water, and how it will float, that is, how much of the stem will rise out of the water, will depend upon the purposes for which it is desired to use it. According to the principle of Archimedes, a heavy liquid will cause the hydrometer to float higher than a light one. It is therefore necessary in this case to make it float in water as deep as is convenient to handle it, and to mark the tube at the point where it stands under these circumstances. When such an instrument is placed in a liquid heavier than water, more of the tube will float above the fluid than when it is placed in water. In the case of liquids lighter than water (alcohol, ether, etc.), an instrument graduated as above stated would be useless, for the reason that it would be too heavy; it could not displace its own weight of the liquid, and therefore it would sink. In this latter case the tube must be so weighted that as much of it will stand out of water as will secure a vertical position for it, and the place where it so stands in water is marked as in the case of the instrument for heavy liquids. From the position of this water-level mark, it is obvious that when this last hydrometer is placed in a liquid

lighter than water, it will sink lower in that liquid. These statements may appear very elementary to many of our readers; but we are pretty sure that a great many of them have never given the subject a thought, and have failed to realize the value of one of the most useful pieces of apparatus that can be placed in their hands.

We have stated above how the zero point, the level at which the hydrometer stands in water, is determined, from the use that is to be made of the instrument. The next step is the nature and meaning of the divisions on the tube, and here an arbitrary method of marking is as good as any other, provided the value of the divisions are known. Of all the hydrometers ever invented, that devised by Beaume, a French apothecary, is the most popular and the simplest to use. The method he adopted for determining the divisions on the scale was to place the hydrometer into a solution of common salt containing fifteen parts of salt and eighty-five parts of water; and the position on the tube where the instrument floated in the solution he marked 15. The tube between this point and the zero mark he divided into fifteen equal parts and continued the division below the 15 mark in exactly the same manner. These divisions are called degrees Beaume, and while they do not exactly represent what Beaume sought to establish, percentages of salt in the solution mentioned, they serve as an arbitrary scale to use for any purpose where a hydrometer can be utilized.

All the Beaume hydrometers now made are constructed upon the principles we have indicated above, and if we know their value for any given solution, we can determine in an instant the specific gravity of that solution and also the quantity of valuable material in it.

Photographers have already in their hands a hydrometer—the actino-hydrometer—for determining the value of their silver baths; but this instrument is devoted to a special purpose, and our idea is that the hydrometer shall be used for all classes of photographic solutions where their value should be known by the operator. Take for example the mixing of the ferrous oxalate developer. We are told to use a saturated solution of the iron salt and a saturated solution of oxalate; but who knows that the solutions are saturated unless special precautions are taken to secure such a result? With a Beaume hydrometer this can be determined in an instant, from the fact that a saturated solution of ferrous sulphate stands at 27 degrees Beaume, and a saturated solution of potassium oxalate at 30 degrees. Hyposulphite of soda solution is saturated when the Beaume hydrometer stands at 40 degrees, and perfectly definite figures can be found for each salt used by the photographer. Furthermore, solutions having a definite strength, say one to four, or such figures, can also be most readily determined by the use of the hydrometer. One word of caution only is necessary, that is, all solutions should be at ordinary temperatures, 60 to 65 degrees F., the instruments being graduated for this purpose only.

We have called attention to the use of the hydrometer that photographers may have a means of knowing more thoroughly what they are doing with their solutions. We are well aware there are many objections to the use of the Beaume scale, but to-day it is in use in every large chemical works on the Continent of Europe and in the United States, and as it is to be found in the market of considerable accuracy, we consider it the best and most useful instrument for the purposes we have indicated. Should our readers think it of sufficient interest, we shall publish, in the future, tables giving for solutions of the more ordinary salts used in phot



## EDITORIAL NOTES.

WE have before as a handsome quarto volume entitled "*Micrometrical Measures of Gaseous Spectra Under High Dispersion*," by C. PIAZZI SMITH, F.R.S.E., and Astronomer-Royal for Scotland. It is seldom we see the record of such painstaking work in the domain of light. Thirty-one handsome plates give the positions of the lines in the spectrum and a vast amount of information as to their character; while a letter-press description gives full explanations of the manner of obtaining the various observations.

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DR. J. M. EDER in some recent experiments upon the effect of dye-stuffs upon silver bromide, has shown that a gelatine plate dyed with naphthol blue is sensitive to all the rays of the spectrum from red to ultra-violet. Such dyed silver bromide has a sensitiveness that extends from the line  $\lambda$  3,600 to 7,600 without a break, and plates so dyed are the most sensitive of all photographic preparations. The problem now remains how such plates are to be developed. Either we must get eyes suited to seeing in darkness, or else we must look for a non-actinic light other than those we now use. If plates are sensitive to all rays of the spectrum alike, in what light shall we develop them?

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IN the last number of the *Journal of the Society of Chemical Industry*, is an extremely interesting article by Mr. C. C. Stanford on alginic acid and its compounds. This acid forms compounds with silver and also with chromic compounds that are sensitive to light, and it appears to us they should admit of some useful applications in photography. At present the fact of their being sensitive to light is all that is noted by the experimenter.

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THE French Government have become so much impressed by the discoveries of the Brothers Henry in astronomical photography, that orders have been given for the construction of three new telescopes, to be devoted entirely to this line of research. One of these is to be located in Algiers.

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*The American Journal of Photography* is now issued monthly, and what formerly was partly a trade circular has become a neat and useful magazine. The typographical appearance is good, and the matter within its pages is interesting to photographers, professional as well as amateur.

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THIS is the last number of the BULLETIN that will reach the eyes of our readers before the meeting of the Photographers' Association of America at St. Louis. If there are any of our photographic friends who are hesitating about going or about sending an exhibit, we would call their attention to the Supplement to the BULLETIN which we give with this issue. In it they will find notices of all the interesting things that are going to happen at St. Louis, and we would remind them of the following prizes which are offered for competition. The first offered was \$150 by our publishers; then came Mr. G. Cramer, the well-known dry-plate manufacturer, who offers \$500; the photographers of Michigan have a chance for two prizes, one from George R. Angell, of Detroit, worth \$22, and another from Harris & Kittle, worth \$75. Robert Dempster, of Des Moines, Iowa, offers a prize worth \$50 for Iowa photographers; and with this issue of the BULLETIN we note yet another prize from the Acme Manufacturing Company,

worth —. Surely these are enough to stir up the energies of all members of the fraternity. But this is not all. The Photographers' Association of America offers eight gold and eight silver medals as prizes for photographers in the United States and Canada, and two gold and two silver medals for exhibits from foreign countries. With so many inducements to competition, there is no doubt that the exhibition at St. Louis will be something worth seeing, and remembering. This collection of examples of photographic art work will undoubtedly elevate the standard of work of all those who study it rightly.

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ON the forty-eighth birthday of MR. G. CRAMER, he received quite an ovation at his beautiful residence in St. Louis, on May 20th. The Arcadia and the Birthday Clubs, of both of which Mr. Cramer is a member, assisted at the festivities. The latter club is specially organized to celebrate the birthdays of its members. The guests were received by Mrs. Cramer, and afterwards sat down to a superb banquet that awaited them. A large number of presents were received by the host, and he was overpowered with congratulations. Later in the evening a procession of Mr. Cramer's employees carrying torches and a "ruby" light at the head of the line, marched to his residence and tendered their congratulations, to which the host replied in a happy manner. The evening closed with a display of fireworks. The BULLETIN adds its congratulations—if not too late.

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### THE DETECTIVE AT THE SEA-SHORE.

BY A CRANK.

"WHAT on earth are you doing all alone there, man?" exclaimed a friend of mine to a mutual acquaintance, as we strolled up the beach together and found him sitting among the rocks pensively chewing the handle of his cane. "What am I doing alone you say? Oh, no! Just wait a moment before you turn your heads; and then look back over my shoulder and see how much alone I am. Then after a careful survey of the landscape, just notice the innocent looking little thing I have in my lap, and you'll comprehend the cause of my undignified mirth. Here I've been sitting for a full half hour in 'meditation fancy free.' Oh! yes, looking out on this beautiful sea, as those two idiots back there thought, and all the time I've been taking thirty-six pictures of them in as many different poses, while they were first making game of me, and then letting me make game of them." "What the deuce do you mean. You don't want to tell me that's a camera do you?" I exclaimed in astonishment. "Well I should—put up your gun—I was only going to assure you that it was a camera and about the tallest fun I have had for months. I was in town last week and bought what they called a 'Detective camera.' The way it works is just this"—but he was interrupted by a simultaneous laugh from us both as his young neighbors of the moment before, overhearing the word "camera" had with a startled look at each other suddenly jumped up from their cosy corner among rocks and fled in consternation. But he had 'em, so we let him continue. "You see this is nothing more nor less than a sort of cigar box with a little opening in the end, which I had pointed at our friends there, and instead of attending to my own business and contemplating the beauties sea-ward, I was looking at that little piece of ground glass on the top. You'll notice that whenever I am passing any

object of interest, it is distinctly outlined in miniature upon that little speck of ground glass. Now, I've had just thirty-six such objects of interest there in the last half-hour, and at each one I turned that crank two or three times, touched this button, and presto! the little slide snapped in front of that opening in the end and the object was permanently fixed on the sensitive paper film wound around that crank drum. Oh! but if to-morrow isn't a day of reckoning for some of these young folks here then I'm no prophet! Easy? Well just come to my room with me a moment and see." An hour later we emerged from that room thorough "cranks" on the subject of amateur photography. In that short time he had cut a long band of blank paper into thirty-six strips, soaked them in a "developer," and shown us how to. He had perpetuated all the touching little scenes of the previous hour, and proved how seldom we "see ourselves as others see us." We waited over for a day to see the opening of Mr. Catchem's "Brief Studies from Nature at the Pier." He had been there but a week, but when the curtains were drawn aside and the guests of the place admitted, the rosy cloud that flitted over the faces of the fair ones, and the brief, but hearty invectives of the men, told the story of the wrath to come and the history of many a summer at the pier. Jack Catchem had no friends left in that town, and his victims, as they gradually recovered from the shock and began to look around for him, had the poor satisfaction of seeing his retreating figure in the distance as he cracked his whip merrily over the horse's head, and left a derisive laugh ringing in the ears of his discomfited victims, never to see them more. Pictures of lovers in all stages of the agony, at all hours; giddy widows; giddier husbands; bathing scenes "before and after;" papas "admitted to the bar;" racing scenes on the drive-way; the fishing party buying its "big haul" at the fish-monger's to verify its boasts—he had got them all with unerring accuracy, and we can only hope the day of retribution will come early to such as he. It was enough for us. We hurried off for a "Detective" to do likewise.

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### A NEW AND VERY EFFICIENT DARK-ROOM LANTERN.

BY DR. J. MAX MUELLER.

AMATEURS who are fortunate enough to have the Edison Incandescent Light in their homes, can easily have one of the nicest dark-room lanterns in existence. It is easily made, costs next to nothing, and is always safe and ready at a moment's notice. I have tried it, and want nothing better nor more convenient. Have a four or six-candle power lamp suspended from the ceiling, and at any height you choose over your developing table. This is best done by having it suspended by the ordinary covered wire, which permits you to remove the lamp to any place you choose. Now procure a round tin box six inches high by four inches in diameter. You will find them at any druggist's. Remove the lid, and cut in its center a round hole of the size to fit your electric-light socket the same as a shade-holder would, and fasten it to the socket by screwing your four or six-candle power lamp into its place. Then cut three divisions in your box proper so as to leave three uprights each about one-quarter of an inch wide and two margins of about the same width, one at the bottom, the other at the top of your box. Wrap around this skeleton lantern about two thicknesses of ruby paper and secure it with two broad gum bands, one around the upper and one around the lower margin. Now put your lid on and your lamp into your lantern



and secure the joint by another broad gum band so as to exclude the slightest trace of white light. Turn on the current, and you will have the nicest lantern in the world. No heat, no smell, no smoke, always safe, ready and convenient. If you desire white light, all you have got to do is to remove the lid from your box.

### PRINTING ON READY-SENSITIZED PAPER.

BY HENRY BEADEL.

*To the Editors of the BULLETIN.*

It gives me great pleasure to comply with your request to tell you how I tone ready-sensitized paper in order to get the colors with which you so kindly expressed your satisfaction.

In order to get *richness* of tone, it is necessary to counteract as much as possible the effect of the acidity of the paper, since acidity means inferior tones. I begin by fuming the paper over a liberal supply of the strongest ammonia, for, say, from three quarters of an hour to one and a half hours, being careful in winter to warm the saucers into which the alkali is to be poured. I find that, even if the paper in fuming is slightly darkened, it seems nevertheless to fix out white in the high lights.

I print until the deeper shadows are well bronzed over, and if the negative be regular in its gradations, until the high lights are decidedly pinkish. And here incidentally I may recommend to the amateur the work entitled "The Art and Practice of Silver Printing," by Captain Abney, directing his attention specially in this instance to the chapter on preparing the landscape negative for printing. I should say print doubly as deep as the finished print is required to be, and if then in doubt, err on the side of depth, and print a few minutes longer. There is such a thing as printing too deeply, but the majority of amateur prints on ready sensitized paper that I have come across, seem to me to have been so under-printed as to have left too small a margin for depth of tone. Thus all *richness* is lost in the finished picture.

Now as to toning. Half an hour before beginning operations I take as much of the gold solution as will allow for two grains of chloride of gold to every four 10 x 8 prints (having previously trimmed them) and pouring this into a clean bottle, shake it up with a little chalk. This neutralizes any free acid, and the gold solution, after the chalk has settled to the bottom, may then be carefully decanted off, and is ready for the toning bath. Or, this neutralizing may be done at the moment of composing the bath, in which case a filter paper may be used so as to hasten operations.

I wash the prints, *face downwards*, in two changes of water, letting them remain in the first, ten minutes, and in the second, five minutes. I do not believe in too much washing; those who believe in more should not carry it beyond three changes. From the second water I transfer them to a bath composed of

Saturated solution bicarbonate of soda.....	1 ounce.
Water .....	18 ounces.

there they remain ten minutes, when the soda is poured off and replaced with fresh water, from which they are carried as needed to the toning bath. While in the bicarbonate bath I make up the toning bath, by adding to *each portion* of the previously neutralized gold solution, containing two grains of gold, six ounces

of water of about 80 degrees F. Then, dropping in a bit of red litmus paper, I pour in very slowly enough of the saturated bicarbonate soda solution to make it gradually turn blue. A little will suffice. Some formulas demand a fixed amount of the soda. This I do not approve, because it seems to me that too much causes a too rapid deposition of the gold, thus letting the toning get beyond control before one is fairly aware of it, especially if more than two prints be in the bath at the same time. When the prints have assumed a rich hue bordering on the purple, or a purplish-bluish tint, take them out and drop them into a *plentiful* supply of clean water. They will go on toning for a while and if I have carried one to the extreme verge as it were—to a point beyond which I feel it would be an injury, rather than a benefit to the tone of the completed print did it go further, I rock the tub so as to help the water in its arresting action. I work slowly, and rarely have more than two prints in the bath at once, and never more than four.

When all are toned and placed in the water, I make one change of water, from which I carry them to the fixing bath:—

Hypo.....	1 ounce.
Water.....	6 ounces.

After twenty minutes' fixing they are ready for the final washing about which I can only say "*chacun à son gout.*"

In conclusion allow me to emphasize the three great requisites to the successful toning of ready-sensitized paper, viz.: Strong alkalization; deep printing; plenty of gold in bath, with alkaline reaction.

New Brighton, S I., May 29, 1886.

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[From our Special Correspondent.]

### ENGLISH NOTES.

SPRING has come again! The sun is shining; the hedge-rows are bursting into leaf; the trees are white with blossom, and the song of the birds fills the air. Once more the cyclist skims along the smooth, level road; and once more the photographer takes the field. It may be that it is "not often fine in England," but we believe that when it is fine, it is the "finest fine" to be met with all the world round. Easter has fallen very late this year, and it has been a really great holiday in consequence. I made a pilgrimage to Stratford-on-Avon, and found Americans there by the dozen, several of them well equipped with photographic apparatus—and, after a careful examination, I must confess that I think the American cameras of best make are quite equal to our own. Stratford is a paradise for the photographer. The winding Avon, from which magnificent views of the Church and Memorial Theatre can be obtained, the quaint streets, the objects with which the "Immortal Bard's" name is more immediately connected, as the Grammar School, Guild Chapel, etc., are looked on with a double feeling by the tourist who carries a camera. He thinks of the pleasure which the negatives he hopes to secure will afford in the future to himself and his friends, and how (many years hence, perhaps) his memory will be quickened by the sight of the fac-similes of the very scenes upon which he is now gazing. But it is in the cottage architecture of the numerous villages that lie within easy reach of Stratford, that the most effective "bits" can be found. Ann Hathaway's cottage at Shottery, and scores of similar low, thatch-covered dwellings, placed, apparently, in the most desirable positions for the artist, invite attention. The

“new hand” fires off all his plates in the first hour or two, and is then disgusted at his want of forethought as ever-increasing beauties present themselves to his view. I had only six plates with me, but they have produced me half-a-dozen excellent negatives.

During the winter months I have been engaged in testing the merits of various developers, and I believe that there are few questions on which it is more difficult to form an unbiased judgment. The soda developer, pure and simple, is with me quite useless for under-exposed or “instantaneous” pictures. For over-exposures, on the other hand, I believe it to be very useful. But the best plan is to add a little ammonia as soon as the detail has begun to appear; and, if the exposure has been correct, or a little too long, this developer will yield a first-class and good-colored negative. The formula which I prefer for ordinary use, allows to every ounce of water,

Pyro.....	2 grains.
Ammonium bromide.....	1 grain.
Washing soda.....	100 grains.
Ammonia .....	1 minim.

The pyro I always use in the form of sulpho-pyrogallol, as prepared by the Platinotype Co., the sulphite of soda in this developer tending strongly to give negatives of a good color. The plate should be immersed in the pyro and soda solution first, and the ammonia added either when the detail is coming out; or, if the image be slow of appearing, before any picture at all has appeared. The same developer, using about half the quantity of soda, is the very best I know for developing lantern slides.

I have just been examining a copy of that choice and rare book, Fox Talbot's “Pencil of Nature,” which our wealthy English amateur issued in 1844-46 at a price of three guineas per copy, in order to make known the capabilities of his calotype process. As in every other copy which I have seen, every picture is more or less faded. In all cases the fading has commenced at the edges and proceeded steadily towards the center. Of the twenty-four plates, some five or six are now mere pieces of yellow paper, upon which the outlines of the subject can still be dimly traced; of the remainder, a purple central patch still reveals some of the pristine beauty of these wonderfully good photographs. Turning from the book to the albums on my tables, and the pictures on my walls, I could but ask: “In what state will these be in 1926?” It is not a pleasant thought that these prized productions of one's brain and hands are so evanescent in their nature. But I believe the remedy lies largely in our own hands. Use paper which has been sensitized on a 60-grain bath; print deeply; tone fully; and wash thoroughly.

I never wash a print for more than twelve hours, and always in a siphon-washer, or some form of apparatus in which the water is entirely *changed* at frequent intervals. To place prints in a large dish or pan into which the water is simply allowed to run from the tap, is a dangerous practice. It is, in fact, simply diluting the noxious salt—the hyposulphite of soda—not removing it. To prove this, let the water in the pan be colored with some aniline dye, when it will be found to retain traces of the color for a surprisingly long period if the “running in method” is adopted. For those who have the time, there is no plan for washing prints like that of changing them frequently from one vessel to another, giving fresh water each time, and each time pressing the print on a slab of glass by means of a sponge or a squeegee. This treatment will effectually



remove all traces of "hypo" in three hours, and the prints will be far more brilliant than if they had had twenty-four hours' soaking.

As far as materials go, we are "having a high old time" of it in England. Several makers of repute now offer quarter plates at a quarter dollar per dozen. This reduction in price apparently had its origin in a split between a "maker," and the "firm" which sold his plates. Repute has it that the latter paid the former £60,000 in the last six years. Still, I have yet to find that "cheap" dry plates are really cheap. Setting aside the better quality of glass and the thicker coating of richer emulsion which a conscientious dry-plate maker puts on his higher-priced plates, we have, or ought to have, the advantage of greater care in all the processes of manufacture, and especially in the testing and packing.

I have lately been engaged in testing, with Warnerke's sensitometer, the principal brands of dry plates in the English market, and I find (as indeed I expected) that the statements of their rapidity contained in advertisements are very wide of the mark indeed. Thus one maker's "twenty times plate" is more rapid than another maker's "sixty times." I find the so-called "slow plates" yield about 10 on the sensitometer. The average of the "instantaneous" plates is, after fixing, 15, while the most rapid plates I have yet met with do not give more than 19. In each case I quote the highest number which is seen of fair density; glimpses can be obtained—mere "ghosts"—of some three numbers higher. I am looking out for a maker who will supply me with a plate registering 25, and which will develop, when fairly treated, without fog. I have made such plates myself (with a *few* failures) but I have come to the conclusion that it will be cheaper to allow the dealers to supply them to

TALBOT ARCHER.

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### OUR ILLUSTRATION.

WITH this issue of the BULLETIN we present our readers with another illustration of the extreme sensitiveness of modern dry plates. The views of trotting horses at Central Park, New York, were taken by Mr. T. C. Roche some months ago, but, owing to delays in obtaining the prints, they have not been ready to present to our readers until now. It may seem a very easy thing to get a picture of a trotting horse, but a few trials will develop two facts: First, the feet move with a speed that is so great, that, unless an extremely quick shutter is used, a single horse will appear to have eight feet, or perhaps four indistinct outlines of feet; second, if you succeed in getting the feet sharply defined upon the plate, the latter may be so insensitive that prolonged development will not give a good printing negative. In the case of our illustration with this issue of the BULLETIN, it will be noted that the pictures of the moving objects (horses, carriages, etc.) are perfectly distinct, showing that, not only was an extremely rapid shutter (the Prosch) used, but the Stanley plates give good printing negatives with exceedingly short exposures. The details in the distance speak for the quality of the Dallmeyer lens with which the picture was taken.

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How is this for an answer to conundrum, page 228 of BULLETIN?

"DEAR SIR,—I would like to know if you have the cards of this late American war, such as battle-fields, Bull's Run, Gettysburg, and all scenery about the 33d (Regt.), taken about (size) 8 x 12, or near as you can. Please answer."

Yours respectfully,

E. R. WILBUR.

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**OBITUARY.**
**JOSEPH ALBERT.**

PHOTOGRAPHY has lost another of its beacon lights in the death of Joseph Albert, of Munich, Bavaria. Herr Albert died on May 5th, at the age of sixty-one. He was born on the 5th of March, 1825, and in after life learned photography with Löcherer, at Munich, and in 1850 had a studio in Augsburg. In 1858 he removed to Munich, where he achieved extraordinary success in the production of life-size portraits. He also undertook the production of 39-inch *fac-simile* plates of Kaulbach's drawings and oil paintings, while others only made 7 x 9 plates as their highest ambition. He also invented one of those wonderful photo-mechanical reproduction processes that are capable of giving to the world cheap *fac-similes* of the works of great artists. This invention alone will make his name memorable for generations to come. The Albertype process for the reproduction of pictures makes it possible to place in the hands of the million, copies of those works of art that before only the favored few could admire. And the name of Joseph Albert will be blessed in many a humble home made beautiful through the inventive genius that placed the productions of the great artists within the reach of those who otherwise would have to be content with objects that do not appeal to the better feelings, or perhaps with bare walls.

Herr Albert was a man greatly admired by all who knew him, and until the day of his death a most interesting member of the photographic world. We regret to have to record the end of so good and useful a life, and add our wreath to those of his sorrowing friends.

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**COLOR-SENSITIVE PHOTOGRAPHIC PROCESSES.**
**BY FRED. E. IVES.**

[Read at meeting of Franklin Institute, May, 1886.]

THE subject of color-sensitive photographic processes has received a great deal of attention during the past year or two, but there has been, and is still, a great diversity of opinion in regard to the capabilities of the various color-sensitizers. In illustration of this fact, I will mention that Becquerel, who first tried chlorophyl, stated that with it he made plates from one-fifth to one-tenth as sensitive to the red of the spectrum as to the blue or violet; Dr. Vogel estimated that eosine-stained plates were eight times more sensitive to the yellow-green of the spectrum than to the blue; I myself stated that plates stained with myrtle-chlorophyl, according to my published method, required even less exposure through a yellow glass than eosine plates. Captain Abney stated that, according to his experience, stained plates were always many times more sensitive to blue and violet than to any other color; and many persons have believed that the color-sensitizers acted more by reducing the blue and violet sensitiveness than by actually increasing the sensitiveness to other colors.

For the purpose of proving the capabilities of chlorophyl and eosine, I have made four photographs of the lime-light spectrum, one on a plain emulsion plate, one on a chlorophyl-stained plate, one on an eosine-stained plate, and one on a plate stained with both chlorophyl and eosine. The spectrum was projected

by means of an optical lantern and a flint glass prism, with a slit measuring one-fiftieth of an inch. It will be understood that the different colors have not exactly the same relative intensity in this spectrum that they have in the solar spectrum, but the difference is insignificant. Short wires were placed so as to cast shadows on the sensitive plate, to aid in the comparison of results; some of these wires, which I have marked, occupy the position of Fraunhofer lines in the solar spectrum. All plates were prepared with the same collodio-bromide emulsion, and received the same exposure and development.

The plain emulsion plate shows very little action, except in the blue, violet and ultra-violet; the maximum of sensitiveness is in the middle of the violet. (It should be noted here that with gelatino-bromide dry plates, the maximum of sensitiveness is in the indigo-blue, about Fraunhofer line *G*, and they are also relatively more sensitive to green and yellow.)

The chlorophyl plate shows a very strong action all through the visible spectrum; strongest in the red, orange and dark green; weaker in the blue and violet; and weakest in the yellow-green. In the red, below *C*, the plate shows about five times as much sensitiveness as in any part of the violet; in the orange-red, twice as much; in the yellow-green, one-half as much; and in the dark green, one and one-half times as much. The violet sensitiveness appears to be slightly reduced near *H*. This experiment proves that my chlorophyl plates are remarkably sensitive to all colors, as I have many times asserted that they were, and that they are twenty-five to fifty times more color-sensitive than those which Becquerel employed in his experiments. They are probably 400 or 500 times more sensitive to red than unstained plates.

The eosine plate shows no action in the red and orange, very little in the yellow, a great deal in the yellow-green, and considerable in the dark green. The action of eosine is strongest exactly when the action of chlorophyl is weakest; it gives about the same degree of sensitiveness to yellow-green that chlorophyl gives to red, but in a broader band. The violet sensitiveness appears to be exactly the same as in an unstained plate.

The chlorophyl-eosine plate shows by far the most remarkable result of all. Neither sensitizer appears to have retarded the action of the other, but rather to have aided it, so that the weakest portion of this photograph below *F* is stronger than the strongest portion in the blue and violet! Nearly a year ago I recommended that chlorophyl and eosine be used together in practical isochromatic photography, and this experiment proves that the combination possesses the advantages which I claimed for it.

I have found that, in order to secure the best results with the chlorophyl-eosine process, fresh, strong blue-myrtle chlorophyl solution must be used, and the amount of eosine must be strictly limited, otherwise the plate will not be so sensitive to yellow and to blue-green. I now prefer to apply the eosine by simply tinting with it water in which the plate is to be washed after applying a plain solution of chlorophyl. I have an over-exposed negative of a bright chromo-card which I made on one of these chlorophyl-eosine plates, with an exposure of one minute in the light of a coal-oil lamp, having a single small argand burner and nickel reflector. No color-screen was used, but, owing to the yellowness of the coal oil-flame, all the colors have photographed correctly. An unstained exposure and development showed only the extreme high lights of the picture very faintly.



# ORTHOCROMATIC OR ISOCHROMATIC?

PHILADELPHIA, May 24, 1886.

To the Editors.

I QUITE agree with you that the term "isochromatic," as applied to color-sensitive photographic processes, is unsatisfactory and incorrect. But is not *orthochromatic* also incorrect and misleading? A photograph in natural colors would be an orthochromatic (correct color) photograph. What we now call an orthochromatic photograph is merely a photograph which correctly represents color values in monochrome, and it should be so designated.

We ought also to have terms which distinguish between color-sensitive plates in general and those which are remarkably sensitive to *all* colors; the distinction is a very important one, because plates which are not remarkably sensitive to all colors cannot be made to photograph all colors in correct-color tone.

Respectfully yours,

FRED. E. IVES.

[Since we use the word "photograph" to designate a picture in monochrome, an "orthochromatic photograph" is a "correct-color monochrome picture," *n'est pas?* We quite agree with Mr. Ives in regard to color-sensitive and tint-value plates, and have no doubt that appropriate terms will be forthcoming when the merits of this new photography is better understood and appreciated.—EDITORS OF BULLETIN.]

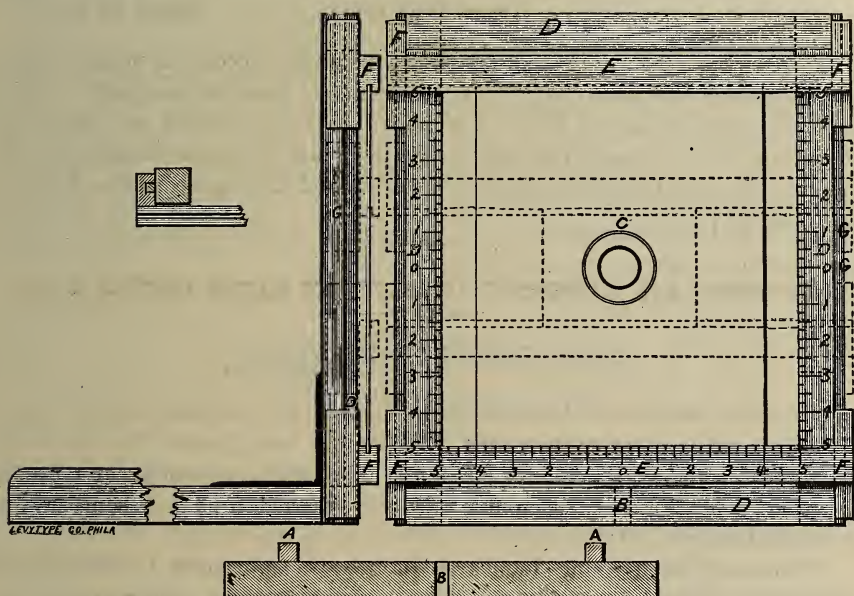
## A CONVENIENT AND INEXPENSIVE APPARATUS FOR MAKING LANTERN SLIDES.

BY C. R. PANCOAST.

[Read before the Photographic Society of Philadelphia.]

MUCH has been said of late concerning the various processes for making lantern slides, while comparatively little attention has been given to the apparatus necessary for the work. Many, no doubt, think that cumbersome and expensive arrangements are indispensable, and are deterred from indulging in this most fascinating of all photographic productions by the thought of a costly outfit. Of course, a well-arranged and constructed copying camera is a valuable adjunct to any outfit. For those who do not possess such an instrument, and are desirous of experimenting, I will endeavor to describe a thoroughly practical and inexpensive appliance which any one, of even moderate constructive ability, can make in a few hours, and at an insignificant cost for material. It is premised that the experimenter has a good camera and lens, and, for sake of convenience, suppose that the former is for plates  $6\frac{1}{2} \times 8\frac{1}{2}$  inches, and the latter of about 7-inch focus. For slide-making, short focus lenses are preferable, on account of the greater compactness of the apparatus, although as far as the product goes it is immaterial what size cameras and lenses are used. For illustration, therefore, I have selected a size that is presumably a standard. Having, then, the camera and lens, the first step is to make the base-board. This may be a pine board, two or three inches wider than the bed of the camera and four or five feet long, and sufficiently thick to be perfectly rigid; this should be planed perfectly smooth and true. Next prepare two strips, A (see figure), for guides, one-half inch square and three feet long. Secure one of these on either side of the board, parallel to the edges, so as to form a track in which the camera may easily slide the entire length of the board. Now cut a slot, B, three-eighths of an inch wide, in the

center of the base-board, running to within six inches of each end; this must be in a line with the screw-hole in the base of the camera, and sufficiently large to allow the tripod screw to move freely the entire distance. This is intended to permit the camera to be clamped in position directly the proper focus is obtained. Next construct a square frame, D, of such size that, when secured to the end of the base-board, its center shall be in the axis of the lens, C, on the camera. In the camera previously mentioned, the distance from the center of the lens to the base-board is six inches, hence the frame should measure 12 inches square outside. This is to be screwed rigidly to the end of the base-board perfectly square and perpendicular. Especial care must be given to this, as in the event of any careless workmanship, distorted slides will be the result. For greater compactness, this frame may be hinged so as to fold back on the base-board, and, when wanted for use, held firmly in a perpendicular position by side braces.



Now make two strips, E, 13 inches long by 1 inch wide and  $\frac{1}{2}$  inch thick, having in one of the half-inch sides a groove its entire length  $\frac{1}{8}$  inch wide and  $\frac{3}{16}$  inch deep; these, one above and one below, form the negative carrier proper.

On the ends of these are fastened blocks F, 3-inches long by 1 inch wide and  $\frac{1}{2}$  inch thick, having in the one inch sides longitudinal grooves  $\frac{1}{4}$  inch wide and deep. On the outside perpendicular edges of the 12-inch square frame are fastened guides, G,  $\frac{1}{4}$  inch square and 12 inches long, planed perfectly true and fitting neatly the  $\frac{1}{4}$ -inch grooves in the 3-inch blocks. When properly adjusted, these blocks and their grooved-connecting carrier bars should slide evenly the whole distance on the guides on the square frame. It is recommended to rub both the grooves and the guides with powdered talc; this makes an excellent lubricant and is much more lasting than oil or grease. It must be remembered that the connecting carrier bars should have their grooved faces opposite, in order that the negative may slide in the grooves. Such a carrying frame as described will take any size plate, either vertically or horizontally, from 8 x 10 down.

To place a negative in position, the carrier bars E, just described, are raised,



or lowered until the plate will just fit easily in the grooves; it is then brought to a central position, as shown by the scale. In order to facilitate the quick adjustment, I would recommend the use of scales on both the horizontal bar and the uprights, these to be graduated in inches and quarters, and reading both ways from the center mark. In this way the adjustment is quickly made, and when once fixed need not be altered, except for a larger or smaller plate. I was led into adopting this arrangement by frequently desiring to make slides from portions of negatives not absolutely central. By sliding the negative laterally, or the carrying frame vertically, a considerable range of motion is obtained. With the usual form of copying camera having "kits" or frames, such "picking out" of the subject is impossible. The apparatus now being complete, it is only necessary to put a negative in the carrying frame, place the camera in position and point the whole affair at a clear northern sky or, where this is impracticable, to the light from a white reflector. To get the exact amount of subject in the slide, it is necessary to mark in pencil on the ground glass the form of the slide mat. When exposing, it is necessary to cover the space between the camera and carrying frame with a dark cloth in order to cut off any extraneous light, and allow only that passing through the plate to enter the lens. This style of copying table answers perfectly for making transparencies and enlargements—for the latter the only alteration necessary would be an extra length to the base-board. Such an apparatus as I have described can be constructed by any carpenter for a small sum, and is thoroughly practical in every way.

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### THE LITERATURE OF PHOTOGRAPHY.

BY W. JEROME HARRISON, F.G.S.

(Continued.)

1858. "The A B C of Photography." Post 8vo. London Stereoscopic Co. and Simpkin. 1s. Eleventh edition, 1859. Twelfth edition, 1860. Nineteenth edition, 1885.

1859. "Principles and Practice of Harmonious Coloring in Oil, Water and Photographic Colors, especially as applied to Photographs. By an Artist-Photographer." 8vo. Cassell & Co., *Photographic News* office, and *Newsman*, 24 Soho square. 1s. Second edition, December, 1859, W. Kent & Co., Paternoster row. Fourth edition, 1862. Fifth edition, 116 pp., 1865. New and revised edition, 1886. 1s. Newman's is well known as one of the principal firms engaged in the preparation of artists' colors, paints, etc.

1859. "How to Color a Photograph in Oil or Water-colors." Cassell & Co. Cloth. 1s.

"How to Color a Photograph; or, Lessons on the Harmony and Contrast of Colors, Principally in their Application to Photography." (Reprinted from the *Photographic News*.) 12mo., pp. viii and 64. Cassell & Co. 1s.

Probably these two titles refer to the same book. The first is taken from the "English Catalogue;" the second from a copy which I examined in the British Museum.

1859. "A Catechism of Photography: including Simple Instructions for Performing all the Various Operations Connected with the Art." (Reprinted from the *Photographic News*.) pp. vi and 97. Cassell & Co. Cloth. 1s.



1859. "Photographic Apparatus, Processes, etc." (Pamphlet.) Murray & Heath, opticians, Piccadilly. 6d. I have inserted this because a reviewer writes: "This little book is not a catalogue." Perhaps he means that it is something more than a mere list of apparatus sold by the publishers. Concerning said publications, it is often difficult to know where to draw the line.

1860. "Shepherd & Co.'s Universal Guide to Photography. By 'A Practical Photographer.'" (Pamphlet.) Third edition. E. Marlborough & Co., 4 Ave Maria Lane, and Shepherd & Co., opticians, 97 Farringdon street.

1860. "Detailed Method of Taking Stereoscopic Pictures." By J. S. E. 12mo. London.

1863. "Hints on Success and Failure in Printing." (Pamphlet.) Lampray, Tibbitts & Co., Paternoster row.

The publishers did a large trade in preparing albumenized, etc., paper, and these "Hints" are thoroughly practical.

1863. "Practical Photography on Glass and Paper: A Manual containing Simple Directions for the Production of Portraits, Views, etc., by the Agency of Light." Fifth edition. Part I, pp. vi and 68, with 28 wood-cuts. Bland & Co., opticians, 153 Fleet street. 1s. The bulk of this book is *slightly* increased by the addition of Messrs. Bland & Co.'s catalogue of 112 pp.

The book appears to have been first issued about 1856, with the name of W. R. Bland on the title-page. Preface states that the original work has now been divided into two parts, of which this is Part I.

1863. "The Universal Text-Book of Photography, with a Chapter on the Æsthetics of Photography from the French of M. Disderi." Harvey, Reynolds & Fowler (opticians, chemists, etc.), Leeds. 1s. Second edition 1864, illustrated. T. T. Lenare, Paternoster row.

Reviewers compare this book to "a carpet-bag full of valuable matter, but in a somewhat crushed and mixed condition," probably the result of the scissors.

1864. "Practical Photography on Glass and Paper. Part II. Containing Directions for the Practice of the Various Dry Processes on Glass and Paper; the Manufacture of Collodion, etc.; Enlarging; Permanent Printing Processes, etc." pp. viii and 72, with 12 wood-cuts. Negretti & Zambra, 153 Fleet street. 1s.

1865. "Hints on the Production of Brilliant Negatives." (Pamphlet, free.) Mawson & Swan, photographic chemists, Newcastle-on-Tyne.

1866. "Practical Photography," in two parts; 1s. each. Negretti & Zambra, opticians, 153 Fleet street.

This is a later edition or issue of the works bearing the same title, published in 1863-64.

1869. "Amusement for Wet Mornings in Photographic Coloring." Freeman. 6d.

1869. "How to Learn the Art of Photography in One Hour: Dubroni's Photographic Apparatus." 16mo. 35 pp., illustrated. Lechertier, Barbe & Co., 60 Regent street. 3d.

Dubroni's portable camera was introduced into England in 1864. It was a wonderful piece of apparatus (an improved form subsequently had a large sale at two guineas each), within which the plate was both sensitized and developed, the necessary solutions being introduced and withdrawn by pipettes. The publishers were, and are, large dealers in artists' materials.

1870. "Manual of the Autotype Mechanical Process; or, the Art of Pro-

ducing Photographs in the Printing Press. With an Illustration from Life." Autotype Fine Art Co., Rathbone place. 6d. Third edition, 1873, revised and enlarged with two illustrations. Spencer, Sawyer, Bird & Co. 2s. 6d. Fourth edition, 1875. Fifth edition, edited and partly rewritten by J. R. Sawyer. 2s. 6d. "New" edition, 1877. 2s. 6d. and 1s.

The "Autotype" is, of course, a carbon process, and this book contains thoroughly practical details for using the various "tissues," etc., which are made by the Company. The prints given as illustrations are of a high degree of excellence. Only the shilling edition is now sold, and for this see SAWYER, J. R. The business of the Company was acquired by Messrs. Spencer, Sawyer & Bird, but it is now carried on under the old title at 74 New Oxford street, where the last edition of the Manual can still be obtained.

1872. "Photographic Hints to Sitters." 12mo. 8 pp. Piper & Carter. 10s. 6d. per 1,000

A handy little tract for guidance as to dress, etc.

1872. "The Collodio-Bromide Process, and its Various Modifications, with Practical Instructions for its Successful Working." New edition. Mawson & Swan, Newcastle-on-Tyne.

1873. "The Heliotype Process Described and Illustrated. With Twelve Specimens, showing its Application to Various Descriptions of Work." Small 4to. Heliotype Company, 221 Regent street. 1s. 6d. (or bound, 2s. 6d.)

1874. "Practical Instructions for Painting on Glass, by Aural." Lecher-tier, Barbe & Co., London. Includes enamel painting, etc.

1874. "Tichborne or Orton? The 'Crucial Test' Tested. By B.A., LL.D. Being a Review of the Photographic Test Suggested in a Recent Pamphlet for Use in Case of Disputed Identity."

The author endeavors to prove the identity of the "Claimant" with Roger Tichborne by a comparison of recent photographs of the former with the existing daguerreotypes of the latter.

1875. "Every Man His Own Photographer." Liverpool Dry Plate Company, Clapham Junction, London. 6d. Mr. Stillman is the author of this capital little book, which was written as a guide for those who used the dry collodion plate then prepared by the Company.

1880. "The Argentic Gelatino-Bromide Worker's Guide." (Pamphlet.) W. T. Morgan & Co. Greenwich. 2s. 6d. The author of this little work was Mr. John Burgess, who was the first to work the gelatino-bromide process commercially, in 1873.

1882. "Photography at Home." 12mo. 15 pp. Illustrated. Marion & Co., 22 Soho square, 6d.

1883. "Photography Simplified. Hints for the Dark Room; How to Work the Collodion Process; How to Expose and Develop Dry Plates, etc. With a set of Chemical Labels." 12mo. 101 pp. Mawson & Swan, Newcastle-on-Tyne. 6d.

This book may be said to mark a transition-point; it is the last of the "popular manual" class which contains an account of the wet-plate process.

1884. "Practical Guide to Photography." 8vo. pp. 223. Illustrated. Marion & Co., 22 Soho square. 2s. 6d. Second edition. 238 pp. 1885.

This is a useful book, dealing entirely with the dry-plate process, and work suitable for amateurs generally.

1885. "The A B C of Modern (Dry Plate) Photography." (Nineteenth edition of the "A B C.") 8vo. 63 pp. Illustrated. London Stereoscopic Company. 110 Regent street. 1s. Bound, 1s. 6d.

FREDERICK SCOTT ARCHER was born at Bishop Stortford in 1813. After serving in a silversmith's shop, his artistic tastes led him to adopt the profession of a sculptor; and it is said that he was drawn to photography by a desire to use this means of securing a record of the productions of his chisel. Archer was an indefatigable experimenter. He was the first to show the superiority of pyrogallic over gallic acid for developing purposes, and invented an ingenious camera, within which the sensitive plate could be developed and fixed. A fluid lens, a triplet lens, and the use of mercury bichloride for whitening positives (although this had been previously noted by Hunt) were also among the products of his active brain. But Archer's great discovery was the "collodion process," the details of which he first published in the March number of a periodical called the *Chemist*, in 1851. In a very short time this method ousted both daguerreotype and calotype, and "collodion wet plates" practically reigned supreme from 1853 to 1880. Archer only wrote one book, of which two editions were published.

1852. "Manual of the Collodion Photographic Process on Glass." 12mo. London.

1854. "The Collodion Process on Glass." Second edition. Enlarged. 100 pp. London: Printed for the author, 105 Great Russell street, Bloomsbury. In the introduction to the second edition of this epoch-marking book, the question as to the introduction of collodion—which has been claimed for other experimenters—appears to us to be very fairly stated: "It is due to M. Gustavus Le Gray to say that he was the first to publish an account of collodion as a photographic agent. I allude to his pamphlet published in 1850, wherein he mentions collodion and its *possible* use. His first application of it appears to have been as an *encollage* for paper. Afterwards he used it on glass, and gave in his memoirs a short account of his researches, but no manipulation in detail was made known, such as would entitle it to be called a photographic process; and from the wording of his pamphlet it would appear to have been merely an extract from his note-book of chemical experiments \* \* \* About the month of June, 1849, I began to turn my attention to collodion as a substitute for paper \* \* \* I tried numberless experiments with it \* \* \* until the month of March, 1851, when I published in the *Chemist* \* \* \* the whole of the process in detail." We may remark, however, that Archer was ably assisted in perfecting his process, and in making it known, by Dr. H. W. Diamond and Mr. Peter Wickens Fry.

The first edition of Archer's book is very scarce, one reason for which may be that he bought up as many copies as possible, though with what object it is not easy to conjecture.

After the success of the collodion process was manifest, Archer became a professional photographer, but in this line he was a comparative failure, his heart being in the laboratory rather than in the studio. He died in 1857, and was buried at Kensal Green. A subscription of £747 was raised for his widow and three young children, and a Government pension of £50 per annum was obtained for the latter, on the ground that their father had been "the discoverer



of a scientific process of great value to the nation, from which the inventor had reaped little or no benefit." All honor to Scott Archer for that he took out no patent for the collodion process, but gave it free for the use of the whole world.

W. E. A. AXON is a "Manchester Man," who has done good work in the organization of free libraries, and in promoting the education of the working classes.

1875. "The Mechanic's Friend: a Collection of Receipts and Practical Suggestions." Cr. 8vo. Illustrated. 339 pp. (Photography, pp. 203-228). Trübner & Co. 4s. 6d. This volume consists of many articles and notes contributed by the author to the *English Mechanic*.

1875. "Practice of Photography." Post 8vo. London.

— BANNISTER. 1863. "How to Sit for Your Photograph." Published by the author. Carlisle. 3d. New edition, 1865. Newcastle-on-Tyne. The author was an "artist" (by which we presume a photographer is meant), who had evidently felt the need of some method by which suitable advice could be given, without loss of time, to his sitters.

R. F. BARNES. 1856. "The Dry Collodion Process." 31 pp. Paper covers. G. Knight & Co., Foster Lane. 1s. In the preface the author claims to have made collodion dry plates as early as October, 1854.

1857. "The Dry Collodion Process. Revised and Augmented. With an Appendix Containing the Latest Improvements." 42 pp. Printed for R. F. Barnes & Co., photographers, 64A New Bond street. 1s. Appendix separately, 2d.

W. R. BAXTER, M.R.C.S., Lecturer on Natural History at Dublin; on Physiology at the Polytechnic, etc.

1842. "Photography: Including the Daguerreotype, Calotype, Chrysotype, etc., Familiarly Explained. Being a Treatise on Its Objects and Uses, and on the Methods of Preparing Sensitive Paper, Metallic Plates, etc., for Taking Pictures by the Agency of Light." 12mo. 23 pp. H. Renshaw, 356 Strand. 1s. The only copy of this book which I have been able to examine is marked "Second Edition, 1842," and in the preface "The compiler takes leave to express his thanks to the editors of various newspapers and periodicals for the high complimentary notices they were pleased to bestow on the first edition of this work."

1843. "Photography." 8vo. Renshaw. 1s. This may be a third edition of the book named above.

LIONEL SMITH BEALE. 1857. "How to Work With the Microscope." Post 8vo. 124 pp. (Photography, pp. 95-97). Churchill. 5s. 6d. Second edition, 1861. A duplicate of that of 1857, with new title-page, preface, and four plates. Third edition, 1865. 56 plates. Fourth edition, 1867. 8vo. Harrison. 21s. Fifth edition, 1880. 8vo. 518 pages. 100 plates. (Photomicrography by Dr. Maddox, pp. 285-342). Harrison, Pall Mall. 21s.

This important book had its origin in a course of eight lectures delivered by the eminent physician who is its author, at King's College, in 1856-57. The growth of that part of the volume which is devoted to photography, well illustrates the rapid increase in importance of this subject. The article by Dr. Maddox

on Photo-micrography in the last (fifth) edition, is unquestionably the standard authority on the subject, although it now needs rewriting.

CUTHBERT BEDE. (See Rev. E. Bradley.)

L. G. BENSA. 1868. "The Photographer's Reference Table for Studio and Field Work: Indicating (1) Proper Distance from Object; (2) Focus of Suitable Lens; (3) Dimensions of Image; (4) Angle Included." Piper & Carter. Price (with angle tape), 2s. This is in the form of a single sheet of tinted paper, 17 x 14 in., printed on one side only. The angle tape is a straight piece of green tape marked off with divisions, representing various angles.

ROBERT J. BINGHAM, an excellent chemist, artist, and photographer, was for some time assistant to Faraday, and a lecturer at the London Institution. Removing from London to Paris soon after the discovery of the collodion process by Archer (with whom Bingham had worked), his studio there became well known, especially for excellence in photographing paintings, etc. He died in 1874.

1850. "Photogenic Manipulation. Part I. Containing the Theory and Plain Instructions in the Art of Photography; or, the Production of Pictures through the Agency of Light. Including Calotype, Fluorotype, Ferrotypes, Chromotype, Chrysotype, Cyanotype, Catalissotype, and Anthotype." 12mo. Seventh edition. 72 pp. 12 wood-cuts. G. Knight, Foster lane. 1s.

Eighth edition, 1851 (supplement to ditto, published March, 1852). Ninth edition, 1852. Eleventh (and last) edition, 1854.

The British Museum copy has "Seventh edition" on the title-page, but the preface says "Sixth edition, January, 1850." I have not been able to meet with, or hear of, any earlier edition. This book is very important, because it contains one of the earliest references to the use of collodion in photography. In the chapter on "Photography on Glass" (pp. 64-67), Bingham first gives Herschel's method of depositing the silver salt on a dry, naked film on the glass. He then adds Niepce de St. Victor's method, in which the glass is coated with albumen. After stating that isinglass may be employed instead of albumen, the author remarks: "We may in place of gelatine (isinglass) employ a number of other substances to form an adherent film upon the glass. The following are a few of those we have experimented with and found to answer moderately well: gluten, collodion (gun-cotton dissolved in ether), varnishes, etc." On the strength of this brief allusion, attempts have been made to deprive Archer of his well-earned fame as the discoverer of the collodion process, and to assign the credit to Bingham. But this is wholly incorrect. Bingham and Le Gray may divide the honor of being the first to allude in print to the possible use of collodion in photography; but the introduction of the collodion process (a very different thing) is due to Archer only.

1850. "Photogenic Manipulation. Part II. Full Instructions for Practicing the Daguerreotype; or, the Art of Taking Impressions on Silver Plates." Ample instructions are given as to the selection and polishing the plates, and the whole of the apparatus required is fully described. G. Knight, Foster Lane. 1s.

The two parts of "Photogenic Manipulation" were also sold in one

volume, "done up in cloth boards," for 2s. 6d. This was a very popular textbook in its day.

In Low's Catalogue of English Literature we find, "1850. Bingham, R. J. 'Instruction in the Art of Photography,' Seventh edition. 12mo. G. Knight. 2s. 6d." And the English Catalogue for 1855 quotes the same title. As I have not been able to find any separate book, I imagine this title refers to the two parts of "Photogenic Manipulation" bound together, as noted above.

*(To be continued.)*

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## A CHARCOAL AND CHALK TALK.

BY J. WELLS CHAMPNEY.

[Before the Society of Amateur Photographers of New York.]

THE question we all have to solve, whether we enter the ranks of Art, or content ourselves with the result of the camera, is the combinations that appear, and their effects.

I cannot tell, none of us can tell, what that subtle quality is that makes the rude pencil line delight the eye, and makes the perfect detail in the work of the engraver.

Just what it is, is hard to solve, and it would be most absurd in me to hope to found any one principle to guide you who are photographing, to produce this very much to be desired result.

At the same time there are principles which have been formulated; there are principles guiding the combination of lines, choice of juxtaposition of lines, which can in a way be formulated, but I can touch upon but a few of them, for one cannot put them into words; I don't think that I am going to put them on to paper, but I hope that there will be something, some impression, left on the mind.

The time of day is another important consideration. We have all been, day after day, happening because of some business engagements, to pass a certain place, an old alley for instance, and it has never struck us at all as being entertaining, but because the boy did not come as early as usual, or from some other circumstance of that nature, you pass this same spot early some morning, or later at night, when all of a sudden you notice the old wall, the least attractive and interesting of all the objects in the city, has taken to itself a charm. \* \* \* It is a great mistake many amateurs make in supposing that when they purchase, say, a 4 x 5 plate, it is necessary, in order not to waste the plate, to crowd in as much detail and foreground as possible, regardless of the artistic qualities of the picture.

The other night I took occasion in our little lantern talk, to suggest that many of us made a mistake in using small plates, for on larger plates much better and more satisfactory results may be obtained.

For instance, we have an 8 x 10 plate we do not want to waste, for we have beautiful results all over the plate; but the art of combination which determines the artist to choose, that may begin in the upper left-hand corner or the lower right-hand corner, or the middle. Now it is a great mistake to keep particularly to that glass, or to conform the picture to the whole image thrown upon the ground glass of the camera.

We all know, yet we do not seem to know or realize, the fact, that sometimes by a walk of a few steps we could get effects which are not produced if we



remain where we are, on this point or on that level. Now concentration is the word we should always keep in mind, that is in our sketches. Wherever it is possible, let us concentrate effect where there is any chance to. The artist of course has vast resources, which the photographer never can have. He commands his skies. All of you have time and time again wished that the sun would stand still, and of course the artist can have the sun wherever he wants it, but we cannot blame the amateur for his inability.

[At this point Mr. Champney sketched in charcoal a prairie scene, having a large clump of trees on one side, water in the foreground, and the setting sun, at the same time effectively introducing clouds in the sky.]

The photographer and the amateur, I find, have a peculiar habit of photographing or printing in the sky which seems to them to be interesting, and they introduce it without the slightest regard to the rules governing cloud forms. They bring cumulus clouds, which are always far up above the horizon, away down against a pretty little mountain or hill; a form which never could exist. The same rule of perspective applies to clouds which would apply to objects in your room in their arrangement. For instance [illustrating] the outline of this cloud is very dark, the second much less distinct, and the lines approach nearer together and the clouds become smaller and smaller as we go back to the horizon.

I have often noticed these clouds [indicating cumulus] placed far down against a prairie background. This is to be avoided, for truth, or at least the appearance of truth, should characterize all our work.

It is true again that the photographer cannot control the growth of the trees like the Artist, for if a tree is in his way he simply leaves it out or reduces its dimensions to suit himself; but I do not want so much to show what is not possible, as what is possible for the amateur to accomplish.

The camera has revealed to us the intricacies of the foreground. To me it has been a source of delight to notice the intricacies of a mass of foreground not in the least inartistic. For instance, you observe the pretty silhouette effect of reeds on the bank of the river, rising up in the foreground backed by the white glimmer of the water. It is these little details which are so interesting to study out. The camera, in fact, gives us in a moment what it would take hours for us to sketch.

[The speaker then rapidly, with chalk and charcoal crayons, transformed the pleasing landscape prairie sketch into what he termed a "sea-scape," which was very cleverly done. From a simple mass of water and sky he formed a charming sketch. A fishing-smack approaching the observer was on one side, while the opposite side of the picture was balanced by a point of land with a lighthouse on the same.]

Regarding it he said: This position is such, that it would be just the same if you were down on the beach, photographing a schooner coming in with all her sails set, in the distance. And we might easily change this you know; keeping first to the idea of a low horizon, our landscape will soon become a sea-scape. (Laughter.)

A great mistake made by many artists and photographers, is allowing one object in a picture to crowd out the interest in another. I saw the other day a photograph in which there were three canoes [illustrating], one here, one there, and another here, all in a row, and it got to be a little bit monotonous before you

came to look for the fourth. I won't stop to draw them. It may be that this kind of a sketch would interest the owners of the four canoes, but to my mind it lacks that element which you would naturally look for in a work of art.

The well-known fact that all pictures should have some center of interest, to lead the eye to expect to see something which it could not, was next explained, and was aptly illustrated by a sketch of a girl's head and shoulders, showing how much it is the fashion to wear a bunch of ribbons or flowers on the left side, so that it will appear to the observer to be on the right. So in the landscape there should be some prominent point of interest, either on the left or right. There was no special reason for it, except that we had been educated to look for it.

The V principle in landscapes was next mentioned and illustrated, first by a sketch of a deep canyon, where the sky was nearly eliminated. Here the contrast of masses of black against masses of lighter backgrounds was to be borne in mind, and the effect was best obtained by arranging the lighting or waiting for the best light. If the bank of the canyon next the camera was in the shade, the lighting of the opposite bank should be at an angle; that is, the sun should almost shine around the corner of the portion of the canyon in the shade, into the camera. By this means the lines of the illuminated bank would be brought out in brilliant contrast to the shaded bank, and by introducing a stream in the foreground the whole effect of magnitude, distance and picturesque qualities would be obtained. Subsequently, by a modification of the sketch, the steep banks were reduced to graceful, rounded mountains, with a winding stream flowing between them, crossed by a bridge in the distance. On the opposite side of the picture was the steeple of a church to break the monotony of the horizon line.

Referring to the canyon picture when the light is towards the camera, Mr. Champney said: Some say you cannot take pictures toward the sun, yet some of the best and most interesting pictures that I have ever seen were taken toward the light, and you who make it a rule never to point your camera toward the sun will lose many of the charms of landscape photography.

Another matter is, how much to sketch. You will find that we cannot get away from this; there are always things to be seen. We must look at something. All pictures have, or should have, concentration.

For marine views I recommend the 5 x 8 size plate as being the best, arranged lengthwise; but for mountains or woods, the longest portion of the plate should be upright.

Mr. Beach has suggested to me what seems to be an excellent plan, that some of the principles of which we have been talking to-night shall be thought out, and that any of you who find compositions during the summer, shall make lantern slides of them, and let us have an evening conference, and throw upon the screen, pictures, some of which are to be beautiful, and some to be in violation of principles, and to discuss them. I see here on the wall so many proofs of beauty, that my only object in this rapid sketching was that there might be a little entertainment in it; and possibly, to some, the formulating of unformed convictions, or, rather, hopes which may become convictions.

The speaker then quickly sketched out his last picture, representing a very pretty wood scene with an attractive water-fall in the center, which resulted in calling forth great applause. He thanked the audience for their attention and then retired to the club-room. All of the sketches were made on common, heavy, bluish-tinted wall-paper, supported upon a special artist's easel.



## MY CYANIN EXPERIMENTS WITH GELATINE EMULSION.

BY V. SCHUMANN.

To complete the notices published in this paper and in the *Photographische Correspondenz* on my late experiments with cyanin, I will give in the following a collection of the results taken from my photo-chemical journal, and my negative plates of the spectrograph and the camera for objective views.

The study of the manner of action of optical sensitizers requires the employment of comparative tests. The plates should always be exposed alongside each other, and for equal lengths of time, to find out the influence of the sensitizer. In this way only can it be recognized with certainty what proportions determine the highest color-sensitiveness.

I have used in my earlier orthochromatic researches, by preference, small strips cut off from different sensitized plates, and then placed together for a sample plate. In this way many emulsions can be examined simultaneously from a single spectrum view, the influence of the deviations of light being eliminated, and much time saved. But the subsequent treatment of the strips causes many inconveniences. Laying loose and not connected in the plate holder, the placing in the developing tray, and particularly the developing, require extreme care, and it also happens that they slide one over the other easily, whereby the appearance of the covered negative is obscured. The washing of a large number of these strips is still more troublesome than the developing. Great care should be taken that the edges of the film and picture-mark shall not be damaged. The preserving of such strips of plates is also connected with difficulty if pains are not taken to paste them together.

Lately I have changed my tactics of operation to overcome these difficulties.

I use for my orthochromatic spectrum views a full size plate (65 x 180 m.m.), covered with the emulsions. Such plates I flow twice and in a manner that both emulsions will meet in the middle of the surface, parallel to the side. The preparing of such a plate is easy, if a thin glass rod is used for the spreading of the emulsion, the rod having a clean, small cork disk at the distance of half the width of the plate, measuring from the end of the rod. The cork disk is moved alongside the edge of the plate, thus avoiding with a little skill the overflowing of the emulsion on the other half of the plate. If a very clean dividing line is desired, the end of the glass rod is dipped into the emulsion near the edge of the plate, and an emulsion line is drawn across the middle of the plate before the emulsion is spread. The first application must have become rigid before the second one can be put on.

If the emulsion contains free ammonia, then particular care is necessary. Ammoniacal emulsions, even if one-half has already become rigid, are apt to easily run together, and will then form an uneven line.

The dry plate I then sensitized in the bath, sometimes the whole plate, but mostly only a part of the same. In the latter case I bathed the plate standing. For this purpose an oblong case made of pressed glass served me. These glass cases are generally used for flower decorations, require only a small quantity of bath, and can be bought at a moderate price in almost any glass store. I filled the boxes to the required height, and prevented the plate from tipping over by resting it against a piece of plate glass placed vertically across the middle of the



bath. The colored plate I let run off for a little while upon blotting-paper, cleaned the moist back, and dried it laying horizontally in the closet, in a good draught.

Plates covered with one emulsion were dipped to one-half. Those with two emulsions I left with an uncolored stripe in the middle, that one and the same spectrum might cover simultaneously four different films. More than four stripes cannot be produced in the space of one spectrum width. This is, in comparison to my former manipulations, a disadvantage; but the same is richly balanced again by the security and the comfort offered by the one-sided plate in its further treatment. Another small disadvantage results in the uneven thickness of the film, which can be observed in the dividing line of two emulsions by a small disfiguration of the spectrum. The demarkation line up to which the film is moistened by the bath is also not very clean and regular, and this is particularly the case with baths containing much alcohol. Regarding cleanliness the new plate is therefore behind the old one, and I would never recommend it if its production had for its aim the publication of the spectrum. But it answers the purpose it is here intended for excellently, and its weak points being in this case only a fault in regard to appearance, it should have the preference.

I am accustomed to mark each plate as soon as they leave the drying box with a running number, but a pencil mark should only be applied, as aniline color, if used for that purpose, would dissolve in the bath and spoil the sensitizer.

In making the following remarks, I suppose that the reader is acquainted with my eosine experiments of October, 1885, as also my observations, according to which cyanin, applied as a bath, sensitizes stronger than if added to the emulsion. The following is now a description of my cyanin experiments.

The dry plate which is to be sensitized must satisfy certain conditions if the best possible results are desired.

*The plate should contain no iodide of silver.*—Iodide of silver may effect a high sensitiveness, but it exercises no favorable influence upon the optical sensitizer; it possesses excitability for the optical light rays (red and yellow) absolutely, and still more relatively, because iodo-bromide gelatine (AgBr and AgI prepared together) is much more sensitive for blue rays than pure bromide of silver gelatine. I have tested cyanin bath plates up to 75 per cent. iodide of silver. The richest ones remained furthest back in red and yellow. The less iodine they contained, the higher both maxima would rise. The highest sensitiveness for the optically clear spectrum was shown by pure bromide of silver gelatine; it also gave the softest negatives.

If the emulsion contains only little AgI, it has a tendency to high brilliancy, even hardness, by applying the potassium developer; much AgI (15 per cent. and more) gives thinner and weak plates.

(To be continued.)

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“Young man, said the Professor, “you should not allow yourself to be guided altogether by your own opinions. You should defer to the opinions of others.” *Student*: “But the poet says, ‘Tis madness to defer.’” *Professor*: “True; but the poet was Young when he said that.”

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*All communications for the columns of the BULLETIN should reach us on Monday preceding the day of issue, to insure their publication at that time.*

[From the Bulletin, Sydney, Australia.]

# AMATEUR PHOTOGRAPHY—A FEW HINTS.

(Continued.)



Sometimes one comes upon good "subjects" quite unexpectedly. Figures in landscapes always add a peculiar interest to the picture.

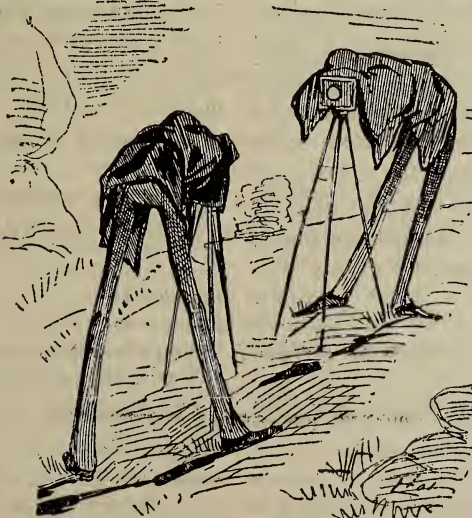


Disagreeable and unlooked-for incidents will sometimes interpose themselves in the way of obtaining satisfactory results. But even these only add to the peculiar fascination in achieving ultimate success.

Should you chance to live in the same house with an amateur photographer, beware of washing in basins left about.



Else might your bath prove to be a silver bath, which is not good for the complexion.





**Prof. C. F. CHANDLER, Ph.D., LL.D.,**  
Aided by **ARTHUR H. ELLIOTT, Ph.D., F.C.S.,**  
and a corps of practical assistants.

*Issued 2d and 4th Saturdays of each month.*

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*E. & H. T. ANTHONY & CO., Publishers.*

THE MINNEAPOLIS AMATEUR PHOTO-  
GRAPHIC CLUB.

THE regular meeting of the above club was held at the club-room May 10th, with *President* A. C. LORING in the chair.

Minutes of the previous meeting were read and adopted.

Messrs. A. J. Warner, G. E. Alden, and David Brackett were elected to membership.

From inability to serve the club, owing to press of other business, Mr. W. M. Regan resigned the treasuryship, and, after passing him a vote of thanks for his services, Mr. Bishop Brayton was unanimously elected to the vacancy.

It was decided to have a "Question Box" placed in the club-room, and Messrs. Shepherd, Fassoldt and Libby were appointed a committee to provide answers.

In the competition for the club badge, Mr. Fassoldt's picture of the first house struck by the recent Sauk Rapids cyclone was adjudged the best.

With the season now opened, some of the members think the others will have to "rise early" to take the prize next month.

As Mr. Fassoldt's picture was taken on a Minneapolis plate, he also took the prize of

half a gross of those plates offered by Mr. Peck, if at any time the successful picture should be taken on one of his plates.

A committee of three, consisting of Messrs. Shepherd, Meyrowitz and Libby, were appointed to correspond with manufacturers and clubs throughout the country, with a view to having an amateur exhibit in connection with the coming exposition.

On motion, the meeting adjourned.

R. D. CLEVELAND.

Secretary.

THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.

ANNUAL MEETING.—*Continued.*

Mr. BEACH—What is the general custom concerning the use of gas for the lantern; is it used compressed in cylinders?

Mr. CHADWICK—We don't use compressed gas, because it does not pay any one to use it.

The theatres are all provided with large gas-holders, and amateurs usually get the gas there. There is one place in London where it can be got, but Manchester is far from London. Manchester is about the center of England, and although only about two or three hours' run to London, yet it is difficult to get the gas as you want it.

A very nice arrangement I saw since I came to this side was in Montreal, where a friend of mine fills his own bottles, and instead of two hundred pounds pressure has about sixty.

He has a large cylinder about two feet six inches in diameter, which holds about six or seven cubic feet of gas. He fills this with oxygen gas, and connects it with the bottle he is going to use from. Then he admits water under a pressure of sixty pounds to the square inch to the bottom of the gas-holder, and as it fills the same the gas is forced out into the bottle. By turning a faucet the gas forced into the bottle is retained. The water is then let out of the gas-holder, the latter is again charged with oxygen, and the operation of letting in the water repeated. He finally succeeds in getting about four atmospheres, or about sixty pounds pressure. He readily fills them in his own house, which is something I have never seen before. The water pressure is that derived from the ordinary street main.

Your lanterns and cameras are quite different from ours, and I dare say they are better than ours. This is like saying, though, Chinese is better than Japanese. I don't understand yours as well as ours, of course. Yours are very nice to look at, but I believe



ours to be the most practicable. In principle they are the same. Some exhibitions I have seen here are very good, and as regards lantern slides, I have seen some very good ones and some very bad ones.

Mr. BEACH—Do they use dry plate slides mostly in England?

Mr. CHADWICK—They use dry plates for making lantern slides because it is easy, but the results produced by gelatine dry plates are, as a rule, not so good, and I think it is easy enough to reason it out. I have made a great many and always go into the easiest. The usual wet plate is exposed and developed and re-developed at the same time, but if the collodion dry plate is used, you can develop afterwards, so I prefer this method for making transparencies.

With the gelatine plate we cannot get good transparencies from a weak negative. A gentleman here says that he can, but I cannot do it. I can by other methods, but not by gelatine.

The dry collodion process, is I think, easy, and has produced results that I have never seen excelled. Most amateurs should, in my opinion, use this.

I might say something about prize presentation pictures. We found that there was some jealousy among the members who sent their pictures for selection, when special judges were appointed to make the awards. This was the point: Some pictures were selected, and somebody else thought that his picture was just as good. So the plan we adopted was to number each picture very plainly, and allow each member to cast a vote for the number which he preferred. The picture receiving the highest number of votes took the prize and was called the prize picture. By this plan everybody is satisfied, since each member has a chance of expressing his opinion.

Thanking you very much for having listened to me, I hope what I have said has been of some interest to you.

Mr. BEACH—Mr. Chadwick's suggestions are well worthy of our future consideration, and I was pleased to have him here to-night.

The meeting then adjourned.

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#### SPECIAL MEETING AND LANTERN EXHIBITION, APRIL 27, 1886.

THE last meeting of the Society in its old quarters, 1260 Broadway, was held on Tuesday evening, April 27th, at 8.20 P. M. *President* BEACH in the chair.

It was announced that the next regular meeting would be held on May 11th, at the new quarters, No. 122 West 36th street, near Broadway, and that Mr. J. Wells Champney would give a "Charcoal Talk." Attention was called to the fact that the new meeting room was very accessible, being but one flight of stairs up from the street.

The officers elected on April 13th, for the ensuing year, were then announced, also the committees. Also the election of the following active members: E. Terry and Alfred J. Taylor; subscribing member: A. G. Tisdell; and corresponding members: George Bullock and John L. Stettinius. Mr. Beach said he regretted to have to announce the resignations of Messrs. A. B. Benjamin, James E. Brush, William Chamberlain, Samuel M. Hyde, and William H. Bartholomew.

Continuing, Mr. Beach said: 'It is with sincere regret that I am obliged to announce the death of Mr. Gilbert A. Robertson, on the 13th inst., the day of our second annual meeting.

Mr. Robertson was one of the original charter members, an active director after the society became incorporated, and also occupied the chairmanship of the Membership Committee up to the time of his decease.

He took an active interest in the affairs of the society, and will be remembered for his desire to raise the standard of membership. Among his latest photographs which attracted attention, were views of the room in which General Grant died, his cottage, and the surrounding walks and drives at Mt. McGregor. He also made one of the best photographs of the Flood Rock explosion from the New York side, and concerning it told me that he was so accustomed to see cannons fire and bombs burst during the War of the Rebellion, that he knew enough not to release the shutter at the first shock of the explosion, as many did. Socially Mr. Robertson was a very agreeable man; he had many friends, and was liked by all who knew him. Not many months ago he showed me a large 8 x 10 camera, which he made complete himself.

He was very fond of photography, and believed in holding every amateur to strict accountability, that under no consideration should he sell his work.

The society will undoubtedly miss his services, and it seems to me that it will be becoming at this time to pass resolutions of respect to his memory.

Dr. JANEWAY—*Mr. President:* For the third time during the existence of the society, the

name of death has appeared in our midst, and it so happened that on the evening of our annual meeting, Mr. Robertson departed this world.

Those who knew him as a man, knew him to be a broad-hearted, liberal man, a true friend, ever ready to extend the hand of sympathy and comfort and kindness to those whom he felt needed it; always ready to resent what he considered an affront, yet still wide enough in all his feelings to believe that they might be wrong, even though he felt that he was grieved.

As an amateur photographer, I know not his equal; he seemed to have mastered the very principles of our art's science. Handy with his hand, ready with his eye, he could construct the most delicate instruments, and from these to the simple carpentering required for a camera. He was one of our first members, and one of the first directors of the society. He always took a deep interest in its welfare. Oftentimes men's names were mentioned as candidates for membership of the society, and by a single word from him the names were not pushed. It was simply this: "They will not do." The other members of the committee always acquiesced in his judgment in this matter, and I have no doubt that the society has been benefited to a very considerable extent by that simple expression, "He will not do."

I knew him as a man, I knew him as a friend, I mourn his loss, and I would therefore, as the President suggests, make a motion that as he was one of our earlier members and one of our first directors, that a special committee be appointed, composed of three members of the society at large, and two members of the Board of Directors, to draft such resolutions, expressive of our deep regret at his loss, and sympathy for those to whom he was dearer than he was to us.

Mr. Beach then appointed the following members for said committee: Dr. J. H. Janeway, Chairman; Frank G. DuBois, Mr. Wm. Darrow, Jr., Dr. A. Hager, and Mr. Wm. Tilden.

The next matter of interest is the presentation prints. The exhibition of photographs which you see on the wall are those which we had at our last meeting, except that the prize pictures are not there. The lucky gentleman is Mr. James F. Cowee, and the picture is 5 x 8 in size, and represents "Surf." It was an instantaneous exposure.

The Lantern Slide Committee made the following report :

*To the Society of Amateur Photographers of New York.*

Mr. PRESIDENT,—Your Committee on Lantern Slides desire to submit the following:

*Resolved*, That this society adopt the size  $3\frac{1}{4} \times 4$  inches as the standard measurement for lantern slides, and that manufacturers of dry plates be and are hereby requested to cut their special plates in conformity with the above.

P. H. MASON,  
*Chairman.*

The above report was unanimously adopted.

LANTERN EXHIBITION.

The lights were now lowered and the exhibition of 100 slides sent by the Cincinnati Club commenced. In consequence of the absence of Dr. Mason, Mr. Beach operated the lantern and was assisted by Mr. Baker and Mr. DuBois.

The slides embraced the work of nine different contributors. Among those that attracted most attention and applause were: "Over the Garden Gate," showing a milkmaid and her lover near a rough gate; "Kentucky Gunsmith;" "Lake at Zoological Gardens, Cincinnati;" "Thorne Mountain House, N. H.;" this was extremely clear, brilliant and picturesque; "Oakland Ferry, California," fine smoke effect; "A High Breaker," an unusually excellent spray effect; several excellent views in the Adirondacks, illustrating camp life; "Curve on the Little Miami Railroad," remarkably picturesque for a railroad photograph; "Short-horn Cattle," and an exquisite landscape view in southern Ohio.

Concerning this latter piece of work, Mr. J. Wells Champney made some criticism, pointing out that the picture would have been greatly improved had the maker cut out some of the sky. Mr. Beach with a sheet of paper eclipsed a portion of the picture to show this effect. "Having a good time," was three or four boys in bathing, splashing around.

There were also several pretty brook scenes by Mr. J. L. Stettinius, and two interesting pictures of a diver in mid-air, one showing him in a horizontal position, with the splash of the water at the jumping board so distinct, that the noise could be easily imagined; the other in the act of a vertical leap, with his hands upright over his head. Attention was called to the perfectness with which the various muscles around the shoulders and arms were delineated. The shutter employed was the Prosch eclipse.



"His Last Photograph" was of a poor consumptive just drawn up in a chair to the doorway of the cottage, surrounded by children behind him, and a group of the rest of the family peering through the window near the door.

Slides of views around Lake George, by Mr. Bullock, as well as some of his recent foreign views: "In the Park at Nice, France," "Roadside Shrine, France," "Ponte Vecchio, Florence," and "Ruins of Roman Theatre recently excavated at Fiesole, Italy," especially the latter, were well received.

A few slides contributed by Mr. Richard H. Lawrence were then shown; one or two of the interior of the "Veterans' Room in the Seventh Regiment Armory," and of a bronze bust, being particularly good.

When the lights were turned on, Mr. Beach explained that this exhibition was the commencement of the exchange of slides among different clubs in this country, by the terms of which one or two hundred of the best slides are to be selected from the four or five hundred contributed by the respective clubs, and then be sent to the Camera Club in London. The slides to be sent from London will first be shown before each of the associated clubs, and subsequently divided *pro rata* among them, to become the permanent property of each. The supervision of the arrangement in this country would be in the hands of the New York Society. The average of the pictures shown was quite satisfactory.

Mr. Beach then called on Dr. Janeway to report a question in the hands of the Question Box Committee.

DR. JANEWAY—The Question Box Committee has for some time had before it a question which I think will occupy considerable discussion and a good deal of thought, and the more the members think of it the more they will study over the matter, and I hope they will. The question is: "Why do silver prints on albumenized paper so often fade?"

I must say, as chairman of this committee, that I have tried to find an answer for this question. I have searched a great many of the photographic magazines and journals and almanacs for a fair answer to it, but I find a great variety of opinions, no two agreeing, all having a glimpse of the truth, but no two alike.

Some say that the cause of the fading of silver prints on albumenized paper is owing to the imperfect elimination of the hypo from the print. The hypo is a very favorite thing to throw a stick at. Nine-tenths of the amateurs

say that if their prints fade it is owing to the hypo. But still it is a necessary article, and we cannot get along without it. I was in hopes some time ago, after reading an eulogistic article upon the hyposulphite of potassium, that it was better than the hyposulphite of soda for fixing plates, etc., easier to be eliminated, requiring one-half the time to wash, etc. I tried it on a dozen plates, and found that I had a most beautiful reticulated gelatine plate.

Some say that the cause of the fading of silver prints is the fact that the paper is not sufficiently washed to get rid of the free nitrate of silver previous to fixing. Some again say that if the paper is subjected to too much washing it gets rid of too much of the silver. From the experiments that I have made, I find that, for the ready sensitized paper too much washing gives us poor tones, weak and cold, and that the washing of ready sensitized paper, no longer than fifteen minutes, in three distinct waters, five minutes to each, gives better results. Whether these prints will fade or not, I have not had time to test.

Other authorities say that there is an imperfection in the albumen caused by impurities.

Others say again that the paper is sensitized by a nitrate bath too soon after having been subjected to an albumen bath. Others again say that you cannot sensitize your paper too soon after the albumen bath. So, gentlemen, the Committee on the Question Box will leave this question in your hands, and hope to have good results from it.

MR. BEACH—Mr. Newton, have you anything to say on this subject?

MR. NEWTON—*Mr. President and Members of the Society:* I do not apprehend that I can throw a great deal of light upon this subject. There are certain facts, however, that happen in certain directions, and that is that the albumen has more to do really with the fading of a print; or a certain combination of the albumen with the hyposulphite. I have seen prints upon plain paper, thirty years old, that have not faded, that are as good as they were when they were first made; I mean on plain paper where there was no albumen, I have seen silver prints on albumenized paper nearly as old, that have not faded; but all such prints were the first ones fixed in a fresh solution of hypo. There is no amount of washing or manipulation by which the hypo is thoroughly removed from silver prints on albumen paper that will prevent its fading if fixed in hypo that has been used one or more times previous. That shows that there is a combination of sil-



ver and hypo which goes to make the print unstable.

It was supposed for a long time that the trouble was because the hypo was not all washed out of the prints, but as I have said before, you can wash a print a week that has been fixed in hypo which has been used before, and it will not prevent its fading.

You can resort to chemical means to decompose and obliterate every trace of hypo, and yet it will not be permanent.

If silver prints are washed in fresh hypo, the first print, if it is properly washed with salts of lead, or anything that will decompose the hypo, so that there is none left, will not fade, I think, under ordinary circumstances.

Of course if there was time I could give a good deal of experience I have had in this direction on paper prepared in different ways; also where the albumen was coagulated without the silver nitrate, and where paper is sensitized upon a 5-grain bath, instead of 60, 80 or 100, as they used to use.

I could show you pictures made twenty years ago on paper sensitized on 5-grain nitrate baths. The coagulation however was done by steam, as a 5-grain solution will not coagulate the albumen.

Just where the trouble lies in an albumen print is not absolutely known, but what I tell you in reference to these facts, point, I think, in the direction of some chemical combination between the albumen and the silver, and that combination takes place immediately. That is the hypo is changed into a compound after the fixing of one print; after this compound is once formed it will in time destroy the silver picture fixed in it. This is my experience, and I think the experience of others who have experimented in that direction.

Mr. BEACH—Are there any further remarks on this subject?

Dr. JANEWAY—*Mr. President:* I move that the discussion of this question be postponed until the next meeting.

Carried.

Mr. BEACH—I have here a series of pictures sent by Mr. John Carbutt, and they are interesting from the fact that they were taken by Captain Peters during the Riel rebellion in Canada, and were all taken with a small detective camera. They are said to be the first real photographs of battles ever taken, and were on exhibition at the recent photo exhibition in Philadelphia. Mr. Carbutt purchased them from Captain Peters.

[The pictures were then passed round.]

Mr. Walker moved that the society send a

letter of thanks to Mr. Carbutt for so kindly sending them for inspection.

Carried. Adjourned.

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A MAN in the smoking car on a Danbury and Norwalk Railway train this morning, leaned over to the man who sat in front of him and said: "Have you a match?" "Yes, but I hain't got any cigar," was the prompt reply. "Then you can't want the match," said the first man, sweetly.—*Danbury (Conn.) News.*

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## Bibliography.

HOW TO PHOTOGRAPH MICROSCOPIC OBJECTS. By I. H. Jennings. New York: E. & H. T. Anthony & Co.

This is the latest issue (No. 18) of Anthony's Photo Series of Hand-books. It consists of the collection of those admirable papers of Mr. Jennings which appeared in the BULLETIN, and is the best treatise upon methods and manipulations in this highly interesting branch of photography. A carefully prepared index adds to the utility of the work, which should be in the hands of every wording microscopist. It contains all necessary details for the preparation of the objects to fit them for photography, and a most careful presentation of the methods of lighting and staining suited to the various objects under treatment. In fact it contains the latest ideas in photo-microscopy.

CANOE AND CAMERA. By Thomas Sedgwick Steele. Boston: Estes & Lauriat.

This is a charming account of a canoe voyage with a camera in those beautiful lakes that make the State of Maine the paradise of the sportsman. The book is illustrated with many pictures from Mr. Steele's photographs, and contains a fine map of the lake districts of the country through which he traveled. It is filled with accounts of the difficulties of this kind of life, together with their successful termination. We know of no book that we can better recommend to the photographic canoeist who contemplates a similar tour, in which healthy exercise gives a vigorous appetite and stalwart development of the human frame, while our beautiful art gives him the means of capturing most charming souvenirs of his journeyings.

PHOTOGRAPHISHER ALMANACH UND KALENDER FÜR DAS JAHR 1886. Ed. Liesegang's Düsseldorf.

Another of those excellent German year-books that arrive so regularly each year. In

this, from the well-known house of Liesegang, at Düsseldorf, we have a fine Meisenbach print of Mr. H. P. Robinson and a short sketch of his work. We also note a brief account of the work of F. W. Geldmacher, the well-known German photographer and author of many papers in the journals. The Eastman-Walker roller holder is also well described, and illustrated articles by Captain Abney and W. K. Burton are also interesting, and our good friend, Victor Schumann, contributes something upon his favorite theme, spectrum photography. There are also a number of contributions from other German and foreign writers, that make this edition of the almanach particularly interesting. If we can find space, we will reproduce some of them for the benefit of our readers.

## What Our Friends Would Like to Know.

*N. B.*—We cannot undertake to answer communications of a technical character except through the columns of the BULLETIN. Correspondents will please remember.

*Q.*—O. N. writes:—Will you kindly inform me, through the columns of the BULLETIN, what is the effect of fuming the albumen paper too long, and also the effect of not fuming long enough?

*A.*—There does not appear to be any harm in fuming for one hour or more, the prints in this case being darker than with short fuming. The effect of short fuming is to give reddish-brown prints. See article in this issue of the BULLETIN on same subject.

*Q.*—F. B. writes:—I expect you will think I ask too many questions; but the BULLETIN is the best photographic friend I have. I would like, if it would not be too much trouble to you, to have these questions answered.

1. What is the cause of these little spots in the sky and all over the print in the picture I send you? It looks as if some person had been trying to retouch it, and had laid the pencil on with about one-pound weight every time. I think the paper is defective.

2. What is the best albumen paper?

3. Is not 4 x 5 inches half-size?

*A.*—Not having received the print mentioned, we cannot answer the first question. In regard to No. 2, there can be no doubt that the genuine N. P. A. Dresden albumen paper

is the best, as it is used by every photographer of importance. No. 3 question is answered when we say that  $6\frac{1}{2} \times 8\frac{1}{2}$  is a whole plate; consequently  $4\frac{1}{4} \times 6\frac{1}{2}$  is half-size.

*Q.*—E. H. writes:—In the following toning bath how often and in what quantity should the acetate be added? Water, 24 ounces; gold, — acetate soda, 4 grains to ounce; carbonate soda to make solution feel quite slippery to the fingers; salt, a pinch. I usually tone from seven to nine sheets of paper—one day's printing.

*A.*—Reading the above formula as given, we should say that 4 grains of acetate to every ounce of water used, or 96 grains in the 24 ounces. This quantity of acetate is a little less than is generally used; the best formula calls for 1 dram (60 grains) in 12 ounces of water. Acetate baths keep indefinitely, and should only be used after being made one week.

*Q.*—W. N. C. writes:—I use pyro, sulphite of soda and sal soda for developing. Sometimes, and more especially when I use the developing solution the second time, my plates will come out of the fixing bath not so much a yellow tone as a *ruby red*. I think the negatives are quite intense when so colored. Is there any way of getting more of a gray tone after the negative is fixed, by bathing in some solution? Before fixing I cannot tell what the color of the negative will be.

Your BULLETIN of January 9, 1886, page 31, speaks of a clearing solution for negatives when they are troubled with yellowness, to be used right after developing and before being fixed, but it seems to me this is something else. I can't tell the color till after they are fixed. All plates are troubled just in the same manner after the developer has been used once.

*A.*—We rather suspect the quality of your chemicals. Such a color as ruby red we have never seen, and should be glad to see one of the negatives, if you will send it to us. A dark yellow color is sometimes produced when the hypo solution gets dirty, and at the same time is very alkaline from soda from the developer. Are you sure your sulphite of soda is all right, and does not contain some chemical as an impurity? Send us a colored negative, and perhaps we can tell you more about it.

*Q.*—J. E. W. writes:—Will you please give me a good formula for making a varnish for negatives that will have a good surface



for retouching without grinding the negative with powder or pumice-stone?

A.—Our publishers manufacture a varnish possessing the qualities you desire. It is cheaper and better to buy these varnishes than to make them in small quantities.

Q.—D. L. H. writes:—Is there any method known to change the color of blue prints? If so, please give particulars. I read an article in the BULLETIN some months ago about toning blue prints: It is not reliable. I have gone over the ground thoroughly. Treated with neutral oxalate potassium the color completely disappears and is *not* restored by hypo, and with acid oxalate there is no effect whatever.

Has uranium ever been used in any printing process?

A.—The method for toning blue prints we gave for what it was worth, but have little faith in any methods for changing their color. To obtain a dark purple tint, treat the prints with weak ammonia and wash thoroughly. These can be changed to a black color by further treatment with gallic or pyrogallic acids. Uranium prints were originally made by Sir John Herschel. Sensitize the paper with a bath of water 10 ounces; uranium nitrate, 400 grains. Use good Rives or Saxe plain paper. Float two minutes. When dry, print under negative ten to twelve minutes; then develop in red prussiate of potash solution, 15

grains to ounce. Wash in clear water and dry. 3 to 5 grains of gum Arabic in the uranium solution gives richer results.

## Views Caught with the Drop Shutter.

MR. E. NOBLE, of Lincoln, Neb., the photographer, was burned out, and suffered a loss of \$3,000.—*The Eye*.

A COPY of WALZL'S *Photographers' Friend* is before us. It is a combination of photographic formulas and a catalogue of apparatus and photographic supplies, and is issued gratis.

THE recent numbers of *Boletin Fotografico* have some good photo-mechanical illustrations. It is issued under the editorship of J. S. Lopez, of Havana, and contains much good photographic material for our Cuban friends.

WE have also received several numbers of the *Photographer's World*, published at Ilkley, Yorkshire, England. It is a monthly, and issued gratis to the profession only.

To those of our readers who have made inquiries about Dr. Laudy's book on "The Magic Lantern," we would say that the work is in the press, and will be issued at an early date.

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*Negative on Stanley Dry Plate,*  
By A. H. ELLIOTT, Ph. D.

*Reproduced by the Indotint Process,*  
By Amer. Photo-L. Co.

"Shipped with her crew, whatever wind may blow,  
Or tides delay, my wish with her shall go,  
Fishing by proxy."  
JOHN G. WHITTIER.

# ANTHONY'S Photographic Bulletin.

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Prof. CHARLES F. CHANDLER, Ph.D., LL.D., *Editor.*

ARTHUR H. ELLIOTT, Ph.D., F.C.S., *Associate Editor.*

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JUNE 26, 1886.

Vol. XVII.—No. 12.

## REPORT ON THE PROGRESS OF PHOTOGRAPHY IN AMERICA.

BY ARTHUR H. ELLIOTT, PH.D., F.C.S.

[Read at the St. Louis Convention of the Photographers' Association of America, June, 1886.]

SINCE our last meeting in the City of Buffalo, in July last, the development of the photographic art in America has showed steady and healthful progress. While no remarkable discoveries have startled us, there has been a steady improvement in the art, and considerable activity in the line of inventions that help to further its onward march. Looking over the records of the past twelve months, we note eight improvements in cameras, the same number in shutters or exposers, three camera stands and attachments, two printing frames, two plate holders, three washing apparatus, one chair, two boxes for shipping dry plates, one revolving background and foreground, one burnisher, one sensitive bromide paper, one case for sensitive paper, one roller for the same, one focusing attachment to camera, one photographic printing apparatus, one stamp-photo process, and two photo-mechanical processes for printing.

It is not necessary to go into details with a description of all these improvements, but the more important of them deserve a passing notice.

In the matter of cameras, we have the method of Flammang for making the folding bed rigid by means of a sliding plate and small bolts working in the side pieces of the bed, which appears to be simple and effective.

A camera to facilitate the production of double negatives, giving the sitter and background by separate exposures, invented by W. W. Grant, appears an ingenious apparatus to produce artistic combinations in portraits.

The Ripley camera is an invention by which one camera can be applied to both very long and very short focus work at will. It is practically an extension-bed camera with a detachable after-section.

Another long-bellows camera is that lately devised by E. B. Barker, of New York. This camera has a separable extension bed, and is very compact when closed, at the same time giving a long extension of bellows.

Mr. G. B. Brainard's camera is a modification of the well-known detective camera originally invented and patented by Schmid, and consists of a number of devices to assist in focusing and exposing the plates, together with facilities for changing plates and concealing the operating parts of the whole apparatus.

W. H. Lewis and E. B. Barker have made several neat and ingenious improvements in camera fittings. One of these is a detachable extension bed,



which allows of the base of the well-known copying camera to be folded into a small space. This is accomplished by means of tongue and groove joints, together with the well-known clamp hooks. Another improvement is the use of a pressure-cam attachment for securing the sliding back of the camera on the bed, instead of the usual screw arrangements. This latter device is simple, quick, and very effective. The third, and perhaps the most ingenious, improvement made by these gentlemen, is their method of fastening the camera to the tripod or stand without the usual screw. This latter device consists in having a key-hole slot in the camera bed, which locks over a small bolt on the tripod or stand, which latter bolt, by a short cam movement, firmly secures the camera in place. By this invention the annoyance of losing the tripod screw is entirely overcome, as none of the parts of this new attachment are loose.

W. H. Lewis has also invented an improved swing back to the camera, which is simple, and answers its purpose quite well.

Another improvement in cameras is the satchel detective camera, invented by Mr. Richard A. Anthony, of New York. The chief use of this class of instruments is for taking pictures without making any special demonstration and without previously focusing upon the object to be caught. The new device of which we speak carries out these ideas very perfectly. In outward appearance, and to the ordinary observer, the camera looks exactly like an alligator hand-satchel that is carried by a shoulder-strap at the side of the pedestrian. This form of the detective camera allows the operator to carry with him twelve plates in the interior of the apparatus, and so carefully packed away that no light can strike them. It is also furnished with an ingenious attachment by which the speed of the shutter can be regulated to suit the speed of objects moving with greater or less velocity; while by simply releasing a catch, time exposures can be made at the will of the operator.

Numerous efforts have from time to time been made to place a number of dry plates in a camera and expose them in sequence without opening the camera. A recent improvement in this class of instruments comes from Mr. Nash, of Harrisburg, Pennsylvania. His invention consists in arranging the plates upon a kind of band with plate holders attached to it, somewhat upon the style of the boxes used for viewing a large number of stereoscopic pictures. In this way his camera serves also as a changing box; while by mean of screens parts of a plate can be covered, and from two to four pictures can be taken on one plate at will. The camera ready for operation contains one dozen plates, the ground glass, the device for taking parts of plates, a time and instantaneous shutter—and all arranged to operate from the outside without opening the box.

In the matter of improvements in shutters, it is almost impossible to give an idea of the many devices that have been brought out for exposing the sensitive plate. All are modifications of the well known sliding plates either working horizontally or vertically, or else they are rapidly moving disks passing one another. Quite a variety of positions relative to the lens have been assigned to shutters—some work behind the lens, some in front; while others take the same position as the diaphragm. One or two of these shutters are worth noting. That of S. S. Benster is very ingenious, and consists of a number of overlapping thin disks of metal that rapidly open and close from the center, upon the principle of the iris of the human eye. It is under perfect control, either a small or large opening being obtainable at the will of the operator, as well as time exposures.

The shutter of W. C. Hadden is also a light, ingenious, and thoroughly convenient device. It is practically two disks, swinging pendulum-like, that rapidly pass one another, and are controlled by a spring which can be set to various speeds. A simple mechanism allows of the shutter being used for time exposures.

The camera stands have been improved in the direction of lightness and portability for landscape photography. The printing frames have been made lighter and with more secure fastenings to prevent opening when moving them during the printing operations.

Improvements in the boxes for shipping dry plates have had for their object the prevention of contact between the sensitive surface and the paper packing. Although much trouble was experienced in the damage of plates from the action of the packing paper, we have not heard much about it lately, probably owing to the more careful selection of the paper used for separators in the packing boxes.

The invention of the double-coated negative paper, by Mr. T. C. Roche, appears to be an extremely important advance. This paper having the emulsion on both sides, entirely does away with the oiling of the paper negative as usually practiced. We understand that the machinery for making this material is now being constructed. It will be very interesting to watch the progress of this unique invention.

A marked advance has been made during the past year in the production of gelatino-bromide paper for printing. It had been known for some years that such paper could be prepared upon a large scale. It was patented by T. C. Roche, and used quite extensively, especially in illustrating photographic journals both here and in Europe, and also for many book illustrations. But it never became very popular until the Eastman Company took up its preparation, and used American machinery to coat the paper with emulsion. Since they have undertaken the manufacture of gelatino-bromide paper for positives, its use has extended, and many beautiful results are now attainable by means of it.

During the past year renewed efforts have been made for the preparation of ferrotype dry plates, and with some success. The specimens of work done with these plates which we have seen were very good.

An ingenious and novel invention in the way of developing trays comes from Mr. Atkinson. The idea of the device is to use the plate to be developed as the bottom of the tray, the sides being formed of two frames that are clamped together with the glass between, and rubber strips to make a tight joint. The advantages claimed for this tray is that the negative can readily be viewed by transmitted light, and as a reservoir serves to hold the developer in one end when the tray is held vertical, there is much less staining of the hands than by the old method. It can also be used for developing paper negatives, in which case a plain glass plate forms the bottom of the tray, which, together with the paper, is clamped between the sides. In this manner the curling of the paper negatives is prevented.

An ingenious device to get rid of the ground glass and focusing cloth consists in having a small sight hole in the front of the camera alongside of the lens, the image being seen on an opaque white surface placed where the ground glass is usually situated.

The stamp-photo invention appears to be very popular in many sections of the country; being much used in connection with advertising.

In the direction of photo-mechanical printing, we have two ingenious processes for printing from relief plates made indirectly from gelatine surfaces sensitized with bichromate of potash. One of these, by Mr. Sherman, of Milwaukee, consists in the production of a stipple effect by spraying upon paper, or other suitable material, a mixture of a pigment and gelatine sensitized with bichromate of potassium; then exposing under a negative and afterward washing away the unexposed and soluble parts. This leaves a picture consisting of a number of dots, more or less thick according to the amount of light that has reached them, and the prints from the surface are said to have the appearance of mezzotint engravings.

The other photo-mechanical process that we have noted is called the Moss-type, and is the invention of Mr. Moss, of the Moss Engraving Company, of New York. We do not know how the surface is produced, but it appears to consist of a number of cross lines that are more or less in relief according to the lights and shadows of the picture. The pictures produced by this method are very good indeed. Wash drawings, stump work in crayon, and fine line work, are all very accurately reproduced.

Photo-mechanical printing is coming more and more into use for book illustrations. Our large magazines are using it extensively, and great improvements are being made in the older methods of procedure.

In photographic literature (which should be supported by every intelligent photographer) there has been one new candidate for favor, and a steady improvement in the older journals. *The Photographic Beacon* started since our last meeting and is a most serviceable addition to photographic literature. *The American Journal of Photography*, hitherto partly a trade circular, has now joined the ranks of legitimate journalism.

Among photographic societies, we note the consolidation of the Chicago societies with decidedly beneficial results, the proceedings of the new society being of a progressive and healthy nature. Several photographic society exhibitions have taken place during the past year, and great interest has been taken in them by the general public; which certainly tends to a better appreciation of the art by the people at large.

In purely scientific photography, America is beginning to follow the lines already laid out by German investigators. The late Dr. Henry Draper, a distinguished son of a famous father, was well known as an earnest investigator in spectrum analysis, for which purpose he called to his aid the art of photography. At his death it became a problem among scientific men as to who should carry on his extremely delicate and exhaustive researches, and his widow finally decided to supply a fund to continue his work as a memorial to her distinguished husband. It was ultimately arranged that this fund should be placed at the disposal of Prof. E. C. Pickering, of Harvard Observatory, under whose auspices the work is now being carried on. Prof. Pickering is well known as an earnest worker in photographic research applied to astronomy, and this memorial fund could not have been placed in better hands.

Another line of scientific photography is also being carried out under the auspices of the University of Pennsylvania; that is, those wonderful experiments in instantaneous photography, by Mr. Muybridge, for determining the character of the movements of men and animals. Perhaps the most curious result of this work is the discovery that in flying, a bird not only moves its wings up and



down, but each feather appears to move on its axis, being vertical in the upward movement and horizontal when passing downward.

But experimental photography never attained more beautiful results than in the researches upon orthochromatic plates; and the United States can claim to-day one of the most successful workers in this line of investigation—we mean Mr. Fred. E. Ives, of Philadelphia. As is well known, silver bromide is insensitive to green, yellow and red; but by treatment with certain dyes and other organic compounds, it becomes sensitive to these colors. Mr. Ives was the first to publish a process by which all colors could be photographed correctly, and used for the purpose collodio-bromide emulsion plates treated with chlorophyl, the green coloring matter of plants. The plates were exposed through a yellow screen to moderate the action of the blue rays. Lately Mr. Ives uses eosine in addition to chlorophyl in his process, and obtains better results. The pictures obtained by this method of procedure are remarkably beautiful, being rich in fine gradations of light and shade.

This rapid review of one year's work in photography does meager justice to the subject; but it will serve to remind you of one thing, and that is, America is well abreast of other nations in her achievements in photography. Of the artistic side of the subject we need say nothing—the exhibition of pictures by this association speaks more eloquently for the artists of our country than any words of ours. Every one must admit that photographic art work is making most rapid strides to higher levels, and this is most probably due to the perfection and great uniformity of modern dry plates, and the skill of those who use them. It is not now haphazard work to make dry plates, but a matter of certainty with our best manufacturers, and the accuracy with which their work is done is truly wonderful.

One thing only remains to complete this report, and that is to recall those who have left us during the last year and are now in the silence of the grave.

Since we last met, death has also been busy in our ranks, and it will be well to recall the names of some of the more prominent figures that have yielded to his sharp scythe.

AUGUST SEMMINDINGER, the well-known camera manufacturer, died at Fort Lee, N. J., on August 6, 1885, at the age of 65. He was a native of Wurtemberg, Germany, and always an active man, whether in business or social life. He was the inventor of a number of improvements in the camera, for which he held patents. Mr. Semmindinger's sons still carry on the business founded by their father.

DOUGLAS HOVEY, the President of the American Albumen Paper Company, died February 8, 1886, at the age of 58. He was about twenty years in the business of manufacturing albumen paper, and passed away after a sickness extending over seven or eight years. He has left a name that is always mentioned with respect by those who had business dealings with him.

JOHN A. SCHOLTEN, the well-known St. Louis photographer, died on March 7, 1886, from an acute attack of pneumonia, at the age of 57. Mr. Scholten was a native of Prussia, where he lived until he was about 14 years old, when he came to this country with his parents. In 1857 he took up photography as a profession and followed it to the day of his death, honored by all who knew him, and with a fame that extended to the photographic circles of Europe. His loss was keenly felt by his immediate associates, and cast a gloom over the pho-

tographic fraternity of the United States. He was one of those men that help photography for its own sake, and was very active in promoting the progress of the art.

JOSEPH W. BATES, late President of the Photographic Society of Philadelphia, died a few weeks ago. He was a member of the Philadelphia Society for 23 years and for seven years its honored President. All who knew him testify to his genial character, his energetic work, and sincere love of the photographic art.

DR. JOHN C. DRAPER, the son of the illustrious John W. Draper, well-known to early photographers in America, died December 20, 1885, from pneumonia, at the age of 51. He inherited much of his father's love for photography, and was deeply interested in the application of photography to microscopical investigations.

DR. JOHN F. WEIGHTMAN, of the well-known firm of Powers & Weightman, the large chemical manufacturers, of Philadelphia, died on May 6, 1886. His name was well known to all who use fine chemicals in the United States.

These were our fellow laborers in life's journey; these have added their quota to the advantages we enjoy in the art we love so well; and while we remember with sorrow that they are no longer with us, let our lives be as useful as theirs, that those who come after us may honor our memories.

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#### EDITORIAL NOTES.

A MARBLE bust of Nicéphore Niepce, presented by his native town of Chalon-sur-Saône, was exhibited to the Photographic Society of France at its meeting on May 7th. It is the fine work of Guillaume.

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THE Photographic Society of France has subscribed one hundred francs towards erecting a statue to the illustrious French chemist, J. B. Dumas. The committee in charge of the affair have issued a final appeal for funds.

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MONS. BORY, of Bordeaux, France, asserts that by floating platinotype paper that has deteriorated upon a bath of chlorate of iron or chloride of potassium, he obtains proofs as good as those from freshly prepared paper. If this proves to be true, a great objection to the platinotype process (the rapid deterioration of the paper) will be overcome, and allow of its more extended use for photographic printing.

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PROFESSOR C. A. YOUNG, of Princeton College, recently gave a very interesting review of the progress of astronomy during the last ten years, before the New York Academy of Sciences. Among other things, he mentioned the application of photography to determine the character of the sun's surface, and he said that this has shown that the face of the great orb of day is constantly changing. The sun spots, which start from either side of the solar equator, take from twelve to fourteen years to make the journey to the center, and gradually grow in size, and they undoubtedly have an influence upon the winds and rains upon the earth's surface. He also mentioned the remarkable researches of Professor Langley, which have proved that the sun's light is blue, the light we receive being what is left after the filtering out of the larger part of the blue rays in passing through the earth's atmosphere.

THERE is some prospect, owing to improved manufacture, of having cheap magnesium in the near future. In London the price is two shillings and sixpence (62 cents) per ounce, where formerly it cost twelve or fifteen shillings. There are many cases in photographic work where the light of burning magnesium will be found exceedingly useful, especially in the making of enlargements from small negatives, which, with this source of illumination, can be done readily at night.

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MESSRS. PETER SPENCE & Co., of Manchester, England, have just sent to the Chemical Section of the Edinburgh Exhibition an enormous crystal of alum, weighing eight tons. This amount of the well-known clearing salt for negatives would supply a city full of photographers.

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WE would call the attention of our readers to a new and very useful advertising department just added to the business pages of the *BULLETIN*. This is a "Sale or Exchange" column, devoted exclusively to the wants of both professional and amateur photographers. No trade items will be admitted.

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TOO much praise cannot be given to our publishers for their generous endeavors to procure a fine exhibit of pictures from Germany for the St. Louis Convention. For months the editors of the *BULLETIN* have been in active correspondence with the most prominent photographers in the German Empire, and when it became evident that we should have a large response to our invitations, our publishers did everything that could be wished to second our efforts, and that, too, at a time when they are overwhelmed with business. That the exhibit is worthy of our German cousins, goes without saying. That we feel proud in collecting so many beautiful trophies of our art, all may rest assured. And both publishers and editors of the *BULLETIN* feel satisfied that the exhibit is second to none at St. Louis received from abroad.

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#### OUR ILLUSTRATION.

THE illustration which we present to our readers with this issue of the *BULLETIN*, is the result of one of the little vacations of our associate editor. When he can find time to throw off the cares of his editorial duties, he likes to snatch up his camera and spend some time rambing among the beauties of nature, catching upon the sensitive plate souvenirs of his jaunts. One of these breathing times in his editorial life was a bright and glorious day last summer, when, with a photographic friend, he took a jaunt around the Highlands of the Hudson, in the neighborhood of Peekskill Bay. One of the captures of this journey was the schooner lying at anchor, the picture of which we present to our readers with this issue of the *BULLETIN*. The view is looking almost due north, with the State Camp in the background. The time of day was about 10 o'clock in the morning, and a simple drop shutter was used to make the exposure upon the Stanley dry plate. The subject seems particularly well suited to reproduction by the Indo-tint process, the prints from which are the work of the American Photo-Lithographic Company who use this method of photo printing.



## OUR PICTURE GALLERY.

As our pages are likely to be very much crowded with the proceedings of the St. Louis Convention for several numbers, we think this will be a good time to give our comments upon the recent additions to our collection of pictures. We are always very much pleased to receive these expressions of good-will from our readers, and hope they will take our adverse criticisms as given in no other spirit than an earnest desire for their success in our beautiful and fascinating art.

Isaac Haas, of Florida, sends us several fine examples of his work with the Stanley plates. The full-length portrait of a gentleman against a perfectly white background is one of the best pieces of work of the kind we have seen. It is sharp, clearly defined in all parts, full of detail in the shadows, and toned just the right shade to give a most pleasing effect. The group of three ladies and three children is quite good, especially the little ones. The background and accessories represent a tropical scene, and are quite effective, except that the grass mat in the foreground did not quite cover up the flooring. The party in the wagon is a very good picture, when we take into consideration that there is not a piece of light in the clothing of the whole of the occupants of the wagon, except the shirt-fronts of two gentlemen, to relieve the somber monotony of the black dresses of the ladies. The view of the house through the trees makes a characteristic tropical scene, with the curious hanging moss on the branches. The last picture, a group in a woodland scene, is very good; clear, sharp and full of detail, only a little flat from over-toning. A warmer tone would suit much better.

Hector Kraus, of Harrisburg, sends us an example of his cabinet work done with the electric light. This is a remarkably good picture for this source of illumination, the details and definition being better than anything of this kind we have seen hitherto. The posing is good.

L. Palenske, of Kansas, contributes several cabinets made on Stanley plates that exhibit very good work. The baby picture is excellent, and as good as the best we have seen.

E. P. Bushnell, of Missouri, sends us a large photo containing the pictures of all the State officers of Missouri, together with the members of the Senate and Assembly. The whole is remarkably well done, and each face is clear and distinct.

John G. Doughty, of Connecticut, presents two 5 x 8 views on Stanley plates. One of these is an instantaneous picture of a landscape that must cover a number of square miles, if we may judge from the print; yet it is a very good view, and is full of detail even in the distance. The other view is on a lake, with a very picturesque bit of rock-work and a row-boat in the foreground. Both prints are clear and sharp to the edges, and well printed and toned. The same contributor also sends a pretty little stereoscopic view on Long Lake, Winsted, Conn., which is very well caught and quite picturesque.

Three handsome 6½ x 8½ views from W. E. Purviance, of New York, are what we always expect to get from such an artist. One of these pictures is a view of the Stewart Cathedral at Garden City, Long Island, and is a most beautiful representation of a strikingly beautiful piece of architecture. Another of the pictures is a view of the Stewart Mansion on Fifth Avenue, New York, and when we note that the picture is instantaneous, we are surprised at the wonderful detail to be found in the shadows. The third of these fine views is of the New

York Hospital, which is equally as well done as the others mentioned, although not so fine a specimen of architecture.

D. C. Belknap, Jr., of Staten Island, sends an excellent little print of a dog, which is clear and uncommonly sharp for such a subject.

W. Dougall, of New Zealand, sends us several cabinets exhibiting the kind and style of work done in that distant land. We must say they are fully equal to the best we can show here, and are most excellent examples of photographic art.

Dr. C. F. Millspaugh, of Binghamton, N. Y., sends us an excellent example of his first efforts in photography, a pretty little water scene. If he can repeat this eminently successful result, we bespeak for him much pleasure in the photographic art.

Tauch & Pannewitz, of Texas, forward a mosaic of their work, which shows some very good examples of groups and portraits; the pictures are rather small to judge about details.

Dr. George L. Sinclair, of Nova Scotia, has again favored us with some of his beautiful prints. They are mostly winter scenes, and are of great beauty. "A Frozen Waterfall" is very pretty, as also is "A Country Wood Road;" in both of which the snow and ice effects are finely caught. But the gem of the series is a snow scene among some pines and larches, in which every twig and leaf has its own flake of snow. The exquisite and delicate beauty of this picture is a source of much pleasure to us.

Frank D. Brooke, of Maryland, sends us a number of stereoscopic views of snow and sleet scenes which are quite interesting; but a little flat, partly, we think, from over-exposure and partly from over-toning.

C. N. Parker, of New Jersey, contributes a cabinet portrait of a little child that is a good piece of work of this character; it is clear, sharp, exceedingly bright and life-like, and altogether a good piece of photographic work.

From L. E. Stair, of Kansas, we have received several interesting views of "Sod Shanties," showing the construction of these primitive habitations of the pioneers on the Western Plains. They are well taken and are an interesting addition to our gallery.

Frank K. Scott sends us several 5 x 8 views, and a mosaic of some of his work. The picture of the "Thousand Island Park Hotel" is an excellent piece of architectural photography. The street view in Watertown is quite good, and the view of the "Falls" is very fine. The mosaic is tastefully arranged, and the background is very effective, the flowers and foliage producing a very pleasing contrast to the pictures.

One of our publishers showed us a fine portrait of Mr. David Tucker, the President of the Photographic Merchants' Board of Trade, from a Stanley plate negative, which came from the studio of Mr. H. McMichael, the Secretary of the P. A. of A. We admired the picture so much that they are hunting for it yet, while (*entre nous*) it adorns our editorial table. It is seldom that we see such a strikingly life-like portrait, and we are very glad to have such a picture of Mr. Tucker.

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I AM a subscriber to your BULLETIN, read them as fast as they arrive, and find much valuable information among the contents.

L. PALENSKE,  
Kansas.

## THE PROGRESS OF PHOTOGRAPHY IN GERMANY AND AUSTRIA.

BY DR. J. M. EDER, *Vienna.*

[Read before the St. Louis Convention of the Photographers' Association of America, 1886.]

PHOTOGRAPHY has made remarkable progress lately in its optical, physical, and chemical branches, as well as technically.

In the construction of photographic objectives, efforts have particularly been made at the present time to obtain exact pictures with considerable depth of delineation. As the most strongly diaphanous portrait-objective, the one made by Petzval in 1840 (double objective) still ranks first. The great light sensitiveness of the bromide of silver gelatine plates does not any longer require the greatest possible bright light in the foreground, as the sharpness is obtained by additional diaphragms and somewhat weaker aplanatic constructions, which possess great depth.

Instantaneous pictures and groups require a sharp delineation of objects at various distances. For this kind of work the Steinheil group antiplanat and Voigtlander's euryscope are particularly suited. The former consists of two pair of lenses of great, but opposite, defects, which correct one another. The construction is not symmetrical. The antiplanat finds particular favor for outdoor instantaneous views. The largest size gives pictures of  $17 \times 22$  c.m. without a diaphragm. The likewise excellent euryscope of Voigtlander, of Brunswick, is a symmetrical lens combination. It is particularly good for large groups and instantaneous pictures. The euryscopes are made to a lens diameter of 13 m.m., giving a picture the size of a sheet of albumen paper. Lately Voigtlander has constructed some very strongly diaphanous euryscope portrait lenses.

Dr. Steinheil has made an improvement in his aplanats by changing the kind of glass (lighter flint glass), thus making them more strongly diaphanous. The front lens is also movable in his new instruments. If the lenses are brought nearer together the objective is suitable for groups standing in a half circle; when removed, the instrument can be used for taking views of houses or other objects on the same conditions.

In regard to photographic equipments for scientific travelers, Dr. Vogel recommends a size of  $13 \times 18$  c.m., or  $13 \times 21$  c.m., for a Steinheil wide-angle aplanat of 7 m.m. opening and 12 c.m. focal length; also an ordinary Steinheil aplanat of 25 m.m. opening and 19 c.m. focal length. Stolze advises, besides these objectives, others of much longer focal length, to obtain inscriptions, etc., of sufficiently large size.

In the line of instantaneous shutters for very short exposures, many constructions have been shown; amongst them many bad or useless ones—causing a vibration of the apparatus, giving pictures not sharp, or not being reliable for some reason or other. The writer is of the opinion that the well known drop shutter made according to designs of Engineer Wight, in Berlin, with metal frame, wooden slide, and pneumatic release, is the most preferable; also the shutter of Thury and Amey, of Geneva. The shutter of Talbot, of Berlin, which is inserted between the two lenses in place of the diaphragm, also deserves commendation. A metal plate moves quickly up and down by the mechanism of the shutter.

In Austria, Germany, and France, the oxalate of iron developer (1 part saturated iron solution mixed with 4 parts saturated oxalate of potassium solution)



as introduced by the writer in 1879, is generally used; whereas in England and America the pyrogallic developer finds more favor. They prefer to work there with pyrogallic acid and soda or potash. Ammonia is now seldom used, on account of its bad odor, losing strength by evaporation, and producing green fog on many plates.

The addition of sulphite of soda to the pyro developer, causing a grayish-black coloring of the plates in place of yellow, is now generally applied.

A very good developer for instantaneous views is the potassium developer mentioned by Stolze, of Berlin, in 1879. The formula used by the writer, and published in 1885, is the following:

## A.

Neutral sulphite of soda.....	25 grams.
Pyrogallic acid.....	10 "
Sulphuric acid.....	3 to 8 drops.
Water.....	100 c.c.

## B.

Pure carbonate of potassium.....	90 grams.
Neutral sulphite of soda.....	25 "
Water.....	200 c.c.

Before using, mix 100 c.c. water with 3 c.c. of A and 3 c.c. of B. The pictures develop softer by an increased addition of water. As a restrainer for too long exposures, a little citrate of potassium, or the more energetic bromide of potassium, is added.

The soda developer, which was first practically introduced in America (by Cooper, Newton and others) has also given ample proof of its good action.

## A.

Sulphite of soda.....	100 grams.
Pyrogallic acid.....	14 "
Sulphuric acid.....	5 to 10 drops.
Water.....	500 c.c.

## B.

Soda crystals.....	50 grams.
Water.....	500 c.c.

Mix, before using, 20 parts of A, 20 parts of B, and 20 parts of water.

The developed plates are well washed with water, placed in a strong alum solution for a few minutes, washed again, and then fixed in a solution of hypo-sulphite of soda (1 to 5).

Worth notice also is the communication of Stolze, according to which the bromide of silver gelatine can be mixed with pyrogallic acid and sulphite of soda. When dried and exposed, these plates will develop in a simple soda solution. The possibility is therefore determined that the manufacturer of the emulsion can add at once the necessary quantity of pyrogallic acid; this being a great convenience and a saving of much time for traveling photographers. Meydenbauer asserts that the sensitiveness of the plates is increased by this addition. About the durability of such emulsions no observations have been made yet, except one of six weeks.

Dr. Eder introduced with success in April, 1885, the sulphite of ammonia in the pyro developer, and on May 5, 1885, he communicated to the Vienna Photographic Society his discovery of the property of hydrazine (particularly the

phenylhydrazine as sent to him by Dr. Walter, of Basle) acting in alkaline solutions as a developer for transparent pictures upon bromide and chloride of silver.

To prevent the loosening of the gelatine film in the fixing bath, which happens very easily during the warm weather of summer time, and to harden the film, 1 part of hypo solution (1 to 4) is mixed with  $\frac{1}{2}$  to 2 parts of saturated aqueous alum solution. The mixture will pretty soon become muddy by separation of sulphur and sulphurous acid, but for all that it acts satisfactory.

The negatives easily become milky, which is no hindrance in their printing qualities, but it does not look very well and is the reason for using the mixed hypo and alum baths only in exceptional cases. The first negatives are washed, dried, varnished, and, according to requirement, strengthened or reduced.

Of the various intensifying methods, the mercury intensifier has maintained its place. Besides the well known methods with chloride of mercury, there is a process, introduced from England in 1884 which meets with much favor. The fixed and washed negative is placed into a solution of

Chloride of mercury.....	2 parts.
Bromide of potassium.....	2 “
Water .....	100 “

until it has obtained the necessary strength. The color of the negative is then white, but is blackened by washing with water and flowing on a solution of

Neutral sulphite of soda.....	1 part.
Water .....	6 to 8 parts.

The silver negative is transformed into bromide of silver and chloride of mercury by the mercury solution; sulphite of soda reduces the chloride to metallic mercury, and thus darkens the negative.

The advantage of this process is that there is no necessity for careful washing between the treatment with chloride of mercury and sulphite of soda. Further, the intensified plate is very constant and does not change during printing, which latter evil sometimes happens to some of the mercury methods.

For the reduction of the too dense parts of gelatine negatives, a simple mechanical process serves, proposed by Lenhard, of Vienna, in 1885, and which can be recommended. The dense parts are rubbed with a linen rag steeped in alcohol. It will be seen that the rag will soon become black, the picture clears up, and the softness of delineation will not suffer in the least.

In applied photography the advantage of shorter exposure has been observed, particularly since the introduction of the gelatine dry plates, and numerous excellent instantaneous artists may be mentioned.

Lugardon and Boissonas, of Geneva; Uhlenhuth, of Coburg; David and Scolik, of Vienna, with pictures of animals, street scenes, etc., are the most prominent. Strictly scientifically executed instantaneous views were made by Auschütz, of Lissa, who photographed men and animals in motion, birds flying, etc., and who is unsurpassed in this branch. That Kayser succeeded, in 1884, in obtaining a lightning photograph on a large scale, is known. Numerous experiments with the photography of the electric spark by Welten, Melckbecke-Plücker, Stein, etc., may be added to this.

Photogrammetry, which was invented by Meydenbauer, serves, as is known, as a very good means of obtaining a simple estimation of mason-work by means of photographic measuring apparatus.

The method has been known since 1867, but on account of the great exactness required of the instruments, and extremely careful execution, had not been applied with success. The German Reichstag allowed 10,000 marks for the progress of photogrammetry. By the continual exertions of Meydenbauer, Dr. Stolze, and others, an important step in the development of measuring photography seems to have been taken, and deserves every consideration.

In Vienna, Lenhard made some arrangements for balloon photography (with an antiplanat) and the aeronaut Silberer accepted the exposures of the plates. Very fine pictures of the Danube and the Prater were obtained.

Applied photography has particularly advanced by the introduction of orthochromatic or isochromatic photography; that is, the photography of colored objects in their proper tone relations. Dr. H. W. Vogel discovered in 1873 the property of many coloring matters to increase the color-sensitiveness of the bromide of silver for those rays of the spectrum which they absorb. The practical application of this combination of silver compounds mixed with coloring matter, for taking colored objects photographically by the collodion process, was practically introduced, particularly by Ducos du Hauron (1875 and 1878) who worked with eosine; further by H. W. Vogel (1884), who used the same coloring matter, but made many improvements; and finally by Ives (1884), who colored bromide of silver plates with chlorophyl. E. Albert, of Munich, also worked with the same isochromatic collodion process. All these methods are based upon the strong coloring of bromide collodion by eosine, when strongly yellow sensitive eosine-silver will form in the silver bath besides colored bromide of silver. Particulars about this process are to be found in the writer's work: "Collodion Emulsions" (published by Knapp, of Halle, 1885; see also number 8 of the "Complete Hand-book of Photography"), as well as in Vogel's book: "The Photography of Colored Objects in their Proper Tone Values," 1885.

Of greater practical importance has become the photography with dry orthochromatic bromide of silver gelatine plates.

Attout and Clayton, in France, were the first to introduce into the market gelatine dry plates colored with eosine for the production of colored objects, under the name of isochromatic plates. H. W. Vogel's azalin plates followed, in 1884, and Eder's orthochromatic plates (August, 1884). The latter name, proposed by the writer, is now generally used for all those plates which show an increased sensitiveness for green, yellow, and red, and therefore reproduce the colors in their proper tone relations.

About the production of eosine plates, reports were made by Schumann, Vogel, and the writer. For the practical photographer the purchase of orthochromatic plates from the manufacturer may be recommended, the manufacturers possessing the secret of the correct application of the coloring matter and its quantity for the emulsion, a successful result not being possible without the exact execution in inactive light. The most simple is the bathing of ordinary dry plates in the color solution. One part of coloring matter is dissolved in 30,000 to 50,000 parts of water, and the plate is placed in that solution for two to three minutes.

As a coloring matter making sensitive for green and orange, a mixture of equal parts of cyanin and eosine is most suitable. Cyanin alone makes strongly red-sensitive, but not sufficiently green-sensitive. Eosine alone is good for green and yellow-green, less for orange.



Schumann recommends a bromide of silver gelatine emulsion (without iodide of silver) of moderate sensitiveness, produced by boiling (but not according to the ammonia process). The plates are at first put into a preliminary bath of 0.25 to 2 c.c. of caustic ammonia in 100 c.c. water, wherein the film will soften. After two minutes they are taken out and bathed in a cyanin solution, 1 to 2 parts ammonia, 5 to 10 parts alcohol, 2 to 5 parts alcoholic cyanin solution (1 to 500), and 100 parts of water, for two to four minutes, after which they are dried.

Schumann obtained with the cyanin plates not only very handsome spectrum photographs up to red, but also orthochromatic photographs of oil paintings.

Mallmann and Scolik (*Photogr. Correspondenz*, 1886, page 40) are closely attached to Schumann's proceedings, and also use an ammonia preliminary bath, but apply an erythrosin bath (25 c.c. erythrosin solution, 1 to 1,000; 4 c.c. ammonia; 175 c.c. water) in place of the cyanin.

The orthochromatic plates should be placed in the developing tray in a very subdued dark ruby light. In front of the photographic object a light yellow glass is placed to weaken the blue in the picture. Orange-colored collodion, coated on white plate-glass in the desired strength, can be recommended. Aurantia (H. W. Vogel) 0.3 grams, or methyl-orange mixed with dimethyl-orange (Eder), is dissolved in 25 c.c. of warm alcohol, and the solution is added to 75 c.c. of 2 per cent plain collodion. This will give a film which will act or have the same effect as dark yellow glass. Such a film is obtained with 0.22 grams aurantia in 100 c.c. of the mixture. This collodion is flowed upon fine plate-glass which is placed before the objective. The exposure can be three to four times longer than without any yellow glass. The development is the same as ordinarily applied, only the tray should be carefully covered in the beginning, and the development should be in dark ruby light.

Schumann, and shortly afterwards Vogel, made known in November, 1885, that pictures could be produced in their true color value upon orthochromatic plates by lamp-light, in consequence of its yellow coloration, without a yellow glass in front of the objective. Mallmann and Scolik, of Vienna, produced in February, 1886, successful portraits upon erythrosin plates by a kerosene light. Notwithstanding the comparatively small illumination of only 250 to 300 candles, the exposure lasted but from three to five seconds.

These gentlemen use as coloring matter erythrosin (from iodo-tetra-fluorescein) whose advantages over ordinary eosine were made known first by the writer in 1884.

*Photographic printing process upon chloride of silver collodion paper.*—Pictures upon chloride of silver collodion are much finer and more brilliant than upon albumen paper. Obernetter, of Munich, introduced in 1868, printing (copying) paper into the market which was coated with chloride of silver collodion. The process went gradually out of use, because the production of the paper in large quantities offered difficulties. It is true the pictures did not bleach, but the collodion film would peel off the paper if great caution was not exercised, or by improper treatment. Liesegang, of Düsseldorf, has now made some efforts to introduce the process again. He brings chloride collodion and silver collodion in separate bottles into the market, which give chloride of silver collodion when mixed. As is known, chloride of magnesia, or chloride of strontia, and citric acid are dissolved in collodion on the one side, nitrate of silver on the other, and are then mixed. The pictures are printed on the paper coated with this solution without the aid

of a developer, and then toned and fixed. These paper pictures with chloride of silver collodion are called "aristotypes."

The process with chloride of silver gelatine paper, discovered by Eder and Pizzighelli in 1880 met with much favor, and has been manufactured since on a large scale in Vienna (Dr. Just, 1885). Just uses for its manipulation in large quantities a so-called automatic exposé invented by Schlotterhoss, which furnishes 400 to 600 proofs in an hour by electric or day-light. The pictures are developed with a weak solution of oxalate of iron, citrate of iron, or hydrokinone.

*Photo-zincotypy and other photographic printing methods for the printing-press.*—In place of wood-cuts, photo-zincotypes are very often used. The reproduction of line drawings is executed easily and securely by the well known methods of the photographic zinc-etching, which offers no difficulties so long as half-tones are not to be reproduced. For the production of photo-zincotypes, the transfer process with chrome-gelatine or chrome-albumen paper takes place after the well-known method.

Some large houses use the asphaltum method, which gives greater sharpness of the fine lines. In the production of the asphaltum solutions great improvements have been made lately. Husnik dissolves the asphaltum in rectified oil of turpentine to a thick liquid, requiring several days. With stirring, three to four times the volume of ether is added; a dough-like precipitate separates, which, after twenty-four hours, is washed with ether and then dried. The dry asphaltum is dissolved in pure benzole, free from any water, and mixed with 1.5 per cent. of Venice turpentine to make the coating more flexible.

The zinc plates are coated with a thin asphaltum coating, and exposed in the sun under a drawing from 10 to 60 minutes. Oil of turpentine serves as the developer. As soon as the picture is developed, benzole is poured over the same without hesitation, and, after draining, it is washed with water. The dried zinc plate is etched as usual.

The production of photo-zincotypes in half-tones, which can be printed in the printing-press, is of the greatest importance for book illustrations. A short description might be appropriate, the many views about the manner of their production not being very clear. The idea of producing photographic reliefs by dividing the picture into lines and dots is an old one. It is the intention to have the dots compose surfaces in the deep shadows, while in the half-tones the black dots are separated by white lines. The picture surface consists, so to speak, of a grain, which represents by its more or less close arrangement the half-tones, without any actual half-tones existing. Meisenbach, of Munich; Angerer and Goschl, of Vienna; and the Military Geographic Institution, deserve particular mention in this direction.

The heliogravure, or the production of copper printing plates by way of photography, is done by etching or the galvano-plastic process. Both processes are based upon the works of Poitevin and Woodbury of more than twenty years ago.

The helio-engraving by etching was brought to a high degree of completion by Klic, of Vienna, in 1883. The process was sold to some persons and was kept strictly secret, so that it has only become known recently. In Volkmer's "Technik of the Reproduction of Military Maps" (1885), we find communications referring to it which have been obtained by practical observations in the Austrian Military Geographic Institution. The process is as follows: A copper-

plate is dusted over with asphaltum powder to produce a grain when afterwards etched. After this a glue (gelatine) picture is put on the copper-plate by transfer (like the carbon process). This tender glue relief is etched into the copper with chloride of iron solution of 1.3 sp. gr. After this the gelatine film is hardened by the action of the chloride of iron, and is finally gradually penetrated and etches by the small excess of water in it. The picture obtained in the beginning is monotonous. By rolling in with heavy ink the finest tones are covered, the deeper ones remain open, and can be etched afterwards. Such plates print very delicate, and are durable when steeled, being capable of furnishing over 1,000 copies, as seen by the writer.

In the Imperial Military Geographic Institution of Vienna, the heliographic copper-plates (for maps, etc.) are produced by way of the galvano-plastic method, by converting a gelatine relief into copper. The galvanic current is produced with a dynamo-machine of Captain Von Huble. The plates to be treated are inserted one behind the other, giving more uniform copper deposits than when placed side by side.

Colored lichtdrucks are at present mostly made with the aid of retouchers and draughtsmen. The process executed by J. Löwy, of Vienna, approaches nearest to that of a genuine photographic picture. From the original or negative, stopped out by retouching, leaving open only those parts which are intended to print yellow for instance, a photo-lithographic plate is taken. In a similar manner a plate is made for blue, etc. The colored picture so obtained (chromolithography) lacks softness. This is obtained by final reprinting of the chromolithograph with a lichtdruck plate in half-tone, which prints over the picture all those colors which give the picture its finish, the picture thereby gaining in fine half-tones.

Troitzsch, of Berlin, prints the picture upon the stone by way of lichtdruck, and this serves as a base for the colorist. Hösch, of Berlin, produces color plates with the aid of photography and painting. He prints the several colored pictures, not from stone, but from lichtdruck plates.

These plates of course will wear off pretty soon and give less uniformity than the stone; but a smaller number of color plates are sufficient, while in chromolithography seldom less than 20 are used.

*Photo-zincotypes in colors.*—Angerer and Goschl, of Vienna, produce by a new process colored prints, so-called "photo-chromotypes," which are made in the printing-press. The principle which is applied here is similar to the colored lichtdruck. At first photo-lithographs are made from the picture to be multiplied, which serve to some extent as copies for the draughtsman. The latter works up only such parts which are to be yellow; upon a second sheet those only which are intended for blue, and so on. Negatives are produced which show only a picture of the blue parts, others for yellow, red, etc. From these negatives zinc printing-plates are etched in half-tone, and the rest of the manipulation is the same as the fitting of the several color stones in chromolithography.

Many newspapers, for instance the *Neue Illustrirte Zeitung*, are furnished with these color prints.

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THE young ladies are delighted with the new satchel detective camera. One of them remarked "It is perfectly splendid. I like it ever so much. It is so sweet to be able to take pictures syraptiously."



## ABOUT CYANIN.

To the Editors of the BULLETIN.

On page 263 of your esteemed journal, I find the assertion that Dr. Vogel had observed an equal influence of cyanin upon bromide of silver collodion and bromide of silver gelatine. Permit me to quote the sentence: "The last named matter (cyanin) has already been tested by Dr. Vogel, in 1875, upon bromide of silver collodion, and he discovered that it makes the bromide of silver extremely sensitive to orange, so that the sensitiveness for orange is even stronger than that for blue. Nine years later, Dr. Vogel proved the same action of cyanin upon gelatine plates." (*Photogr. Mittheilungen*, xxi, page 10.)

I cannot agree with this assertion of your correspondent, it being in direct contradiction to the actual facts. To be sure, it is correct that Dr. H. W. Vogel was the first to apply the cyanin as a sensitizer, and that he observed its excellent action upon collodion dry plates. ("Handbook of Photography," by Dr. H. W. Vogel. Third edition, page 154. Berlin, 1878.) The fact also cannot be denied that Dr. Vogel was the first to make mention of the sensitizing action of this coloring matter upon the modern gelatine plate. (*Photogr. Mittheilungen*, 1884, xxi, page 10.) But Dr. Vogel has nowhere asserted that cyanin has the same effect upon gelatine plates as upon collodion dry plates.

Dr. Vogel's cyanin results with gelatine were of an entirely opposite character. As proof of this I cite the following extracts from his own writings.

These words will best demonstrate what value was placed by him on the optical sensitizers for the gelatine emulsion process:

"That indeed an action, even if insignificant, of the colors upon gelatine plates takes place, I have determined by experiments." (*Photogr. Mittheilungen*, 1880, xvii, page 15.)

But, admitted that these had been the first tests with the gelatine plate, at that time very little known, another expression of the same author, and the one to which your German correspondent refers, might be more to the point, being in the year 1884, in which the modern process of the dry plate had already sufficiently proven its capability of existence, and the weak points and peculiarities of the new plate had already been submitted to a thorough and also successful study.

Dr. Vogel says further, at another place: "It is not only eosin, but also cyanin and methyl violet which act upon gelatine plates. The action of fuchsin I have mentioned previously. These coloring matters make gelatine plates, corresponding to the theory laid down by me eleven years ago, sensitive for that part of the spectrum on which they show absorption bands. But the sensitizing action of coloring matters upon gelatine plates is far behind that upon collodion plates. \* \* \* The conditions under which a coloring matter has a sensitizing action are different for each substance, and have to be determined by experimental tests with the spectrum for each separately." (*Photogr. Mittheilungen*, xxi, pages 10 and 11.)

This is all that has been said by Dr. Vogel about cyanin in the gelatine plate, and from such declaration it cannot even be seen for which rays cyanin sensitizes. And only those with spectroscopic knowledge would be able to give an explanation about this with the aid of the spectrum apparatus. Still less do we hear about the sensitizing strength. It is therefore unreasonable to speak,

according to these declarations of Dr. Vogel, "of the same action of cyanin upon gelatine plates," as the contrary would be more appropriate.

It seems as if Dr. Vogel himself placed no particular value upon this meager mention of the cyanin, otherwise he would certainly have referred to it in his book, "The Photography of Colored Objects," (Berlin, 1885), particularly as the optical sensitizers are treated pretty extensively. Dr. Vogel speaks in this book (page 93) only of his tests with cyanin upon collodion, and refers besides to the information given by Eder and others, who have made a thorough study of the relation of this coloring matter to gelatine emulsions.

Although Dr. Vogel, remarkable as it may be, has not deemed it necessary to submit the cyanin to a further investigation (there is no sensitizer which acts so excellently for orange and light red), it seems as if he had learned to esteem its advantages lately, as otherwise he might have recommended for the photographing of orange, not cyanin, but the orange-sensitizing color matter, azalin, discovered by himself.

In an article published recently in "Wiedemann's Annalen," Dr. Vogel says verbally: "Thus it would be possible to sensitize bromide of silver plates for orange by coloration with cyanin; for yellow by coloration with eosine; for green with saffronin; for greenish-blue with fluorescein."

This recommendation of the cyanin in one of our most eminent scientific journals, will illustrate sufficiently the position of Dr. Vogel in the cyanin question, and it is to be expected that, like Dr. Vogel, the other opponents of the cyanin will have the same view hereafter.

V. SCHUMANN.

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## ORTHOCHROMATIC PHOTOGRAPHY.

BY EDWARD BIERSTADT.

[Read before the Photographic Section of the American Institute.]

THE subject of orthochromatic photography has been discussed with so much warmth, that a short outline of my own experiments in that direction may be necessary, lest it should be said that I was a contestant for the credit of priority in the method which I have favored.

The fact that nearly all sensitive substances are affected most by the blue rays of the spectrum, has been known as long as the art of photography itself. In the *Journal of the Franklin Institute of Philadelphia* for 1837, Professor John W. Draper describes a trough, with plate-glass sides, filled with different colored fluids, and notes the effect of light after passing through it on sensitive paper prepared with chloride or bromide of silver. He also mentions the image of the solar spectrum passing through a trough when filled with chromate of potassa and ammonio-sulphate of copper; the chromate stopped out all the blue and violet rays, and the copper all the yellow and red rays.

In 1840 he made the first portrait ever made direct from life, and passed the light through a trough of the copper solution, correcting with it the chemical focus of the objective.

In 1869 the *Photographic News* published an account of experiments in colored photographs made by Charles Cros, and refers to similar work done by Ducos du Hauron, they having used glass of different colors to pass the light through for making negatives of each of the primary colors.

In 1873 the journals were again noticing the work in color done by Mr. Joseph Albert, of Munich. Samples of work were sent to me at that time, and I then became interested in the same branch of work. My first object was to repeat the experiments of Ducos du Hauron and Albert, but instead of making negatives for each of the three primary colors, I added a fourth plate for the proper light and shade. This required what we now call orthochromacy. If I am correctly informed, Dr. Vogel was the first who attempted to change color values by chemicals in the sensitive film, and he is still its strongest advocate. He adds the chemical (azalin) to the emulsion during the process of its manufacture.

Schumann says that cyanin is by far the best sensitizer for orthochromatic plates, and prefers to soak the plates in it after they are coated.

Dr. Eder, Scolik, Captain Abney, Captain Waterhouse, and others, have named various coloring matters for sensitizers to be applied to the film, or to be incorporated in it. Every one of them uses a colored medium to pass the light through in addition to the quantity they have already in the film. Some of them have told of partial success in using the yellow light of petroleum lamps instead of colored glasses, but this is hardly practicable in copying large paintings or colored pottery.

The so-called sensitizers for colored rays do not seem to be sensitizers at all, being invariably made of dye-stuffs.

They appear only to be screens to protect the sensitive surface from the effect of the more refrangible rays until the light has time to act on the less refrangible.

The waves of light at the red end of the spectrum being nearly twice as long as those at the violet end, give the latter twice as many in a given time as the former; the result is, the violet end is sufficiently affected while the red end is but half done. To remedy this, the only way appears to be to either increase the rapidity of the waves at one end, or to stop them out at the other. If this is a fair statement of the problem, why is it not better to operate on the light direct, instead of doctoring the plate, and possibly interfering with the good qualities that the best emulsions have?

The fact that the qualities of emulsions are changed by adding coloring matter is admitted by all. We read in every issue of the journals of difficulties having been almost overcome. A few experimenters have expressed a doubt of the utility of doctoring emulsions or plates. Mr. Angerer, of Vienna, says that dyeing the plate is of no importance, and recommends a variety of colored glasses from light to dark yellow. Captain Abney speaks as though he was not positive of the best method.

Schumann says that the success and vitality of orthochromacy rests solely on the light filters, such as glasses coated with collodion colored with curcuma, picrin, methyl-orange, or aurantia, from a light straw color to a deep orange; but he recommends bathing the plate in cyanin besides.

If these filters or colored mediums are so indispensable, is the bath necessary at all? In my own experience I find the bath not only useless, but injurious. By using the indispensable color screen on the cyanin plate I have secured a fair result; by using the same screen increased by the amount of color in the plate, and exposing any good rapid plate, the result will be fully equal in every respect.

The azaline plate of Dr. Vogel gives very satisfactory results when applied to the color scale which I have adopted and treated as he recommends, but all good commercial plates will do the same with the screen alone.



The colored medium alone is sure and simple. If there is any difference in the results at all, it must be in the sensitiveness. So far as my own experience goes, it is in favor of the simple color screen alone; I must confess to long exposures, not only three or four times longer, but from fifty to some hundreds of times longer. This increase of exposure has caused me to hesitate about recommending the method, but after trying various others on the same subject and in the same light, I find it fully up to any of them.

The azaline plates prepared by an expert in this country with materials procured from Dr. Vogel, require six minutes' exposure through the required screen to produce a good negative; the same screen increased by the amount of color in the film of the azaline plate and interposed between the objective and one of the Carbutt or Stanley plates—not orthochromatic—produced the same result in four minutes.

An azaline plate made by Obernetter, in Munich (for which I am indebted to Mr. Bellinger) has shown a greater degree of sensitiveness, but (to return the compliment, Mr. Bellinger gave me on a picture of my make) I must say that this azaline plate is not correct in color tone; there is no difference in the red and black, the green has the same tone as the indigo, and is much too dark. The effect is very like the cyanin plate.

With a tank of plate-glass sides, a greater variety of coloring can be obtained than is possible with colored or stained glasses.

This is desirable, as there are many subjects that can be rendered sufficiently near the color tone to answer all practical purposes. Where the original has little or no red, or when the colors are not very strong, a weak solution will produce all that is required. Any necessary changes can be made in a few minutes' time. Some of the metallic solutions may be useful, and can easily be used in a tank, but not so well in the emulsion, nor as a stain or coating on glass.

Among the many colored solutions producing very nearly the same effect, are: Aniline yellow, turmeric, chloride of gold, bichromate of potash, saffron, and aurantia.

I am not fully persuaded which will permit the light to act the quickest; at present the bichromates seem to be the most promising.

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## HOW TO TAKE GOOD PORTRAITS BY ELECTRIC LIGHT WITH BUT VERY LITTLE EXPENSE.

BY HECTOR KRAUS.

HAVING noticed that there were hundreds of people of the working class who wanted photographs, but could not afford to lose half a day in order to have them taken (and as much wages) I resolved to take photographs at night, and at once set to work to construct and build an apparatus for the purpose, which in time proved to be so thoroughly practical, and gave me such excellent results, at the same time involving but little expense, that I decided to give a description of it, through the columns of this journal, for the benefit of others who may be interested in this line. It may as well be mentioned that it will be only of practical value in such places where there is an electric-light plant in existence to illuminate the town or city; besides this, small as the investment is, it would not be advisable to open an electric-light studio, except in towns or States where all galleries are closed on Sundays; but in such places it will not

only pay well, but at the same time prove the most effective advertisement for business that can be desired.

#### DESCRIPTION OF APPARATUS.

The first step to be done was to make an arrangement with the electric-light company, the superintendent of which took quite an interest in the matter and treated me very liberally. The regular charges the company made for supplying an arc light of somewhat over 2,000 candle power, burning until 10 o'clock P. M., were \$10 per month, or about 40 cents a night, the company furnishing the lamps and carbons and putting in the wires. In my particular case, and because I was in possession of my own electric automatic focusing lamp, they charged me 40 cents a night, and only on such nights when I used the light and made negatives; so there was absolutely no risk for me. This advantage can of course not be expected everywhere. To build an apparatus for lighting the sitter properly, I proceeded as follows: I first constructed a platform 4 feet long, 2 feet wide, 5 inches high, traveling on large castors. On one end of this platform was erected a sort of stand or frame-work, consisting of four corner pieces, made of strips  $4\frac{1}{2}$  feet high, 3 inches wide, 1 inch thick. These strips were screwed against the sides of the platform about six inches apart, on the top, and in the center of these corner pieces were fastened four other strips to form a frame-work and to give the whole strength. I then fastened in the center of each frame a cross piece with a half inch round hole in the center, through which a long head-rest rod could be slipped, and raised and lowered to any desired height.

In order to adjust the height, a cast-iron collar or ring was attached to the rod, to be fastened with a set screw. This ring rested on one of the cross pieces—thus the rod could be easily revolved. The top of the rod was provided with a cross piece of an old head-rest, through which another head-rest rod was passed crosswise, which could be raised or lowered to any desired angle. The end of this smaller rod carried the large reflector used for lighting the sitter. To make this reflector, I had first a wooden disk or center piece made by a wood-turner, about 6 or 8 inches in diameter, and turned slightly hollow or curved inside. In the inner surface of this disk I then fastened with small screws, 8 ribs or sticks made of hickory-wood, each 3 feet long, about  $\frac{1}{2}$  inch wide and  $\frac{1}{4}$  of an inch thick, at equal distances. On the end of each rib was screwed a small screw-eye. A string was then passed through all the screw-eyes and pulled together to make the sticks bend and form a curve of about  $1\frac{1}{2}$  feet deep from the center, the whole looking like the framework of a huge umbrella. The sections of this framework were then covered with pieces of stout card-board (No. 1). These were fastened alongside the ribs with small tacks; afterward strips of muslin were glued over the seams inside and outside. The card-board next received a good sizing with glue or gelatine, then one or two coats of paint, outside dark and inside white; at last the inside was twice coated with the best white kalsomine, giving a perfect white and dead surface. The reflector measured about  $5\frac{1}{2}$  feet in diameter, being about  $1\frac{1}{2}$  feet deep. On the front part of the platform, right in front of this reflector, was fastened another head-rest simply by means of skate straps. This carried my electric lamp. In case a regular street arc lamp is to be used, a sort of wooden stand must be constructed to carry the same so it can be raised or lowered. Any ordinary carpenter can make the whole apparatus for a few dollars and all the iron-work consisted of

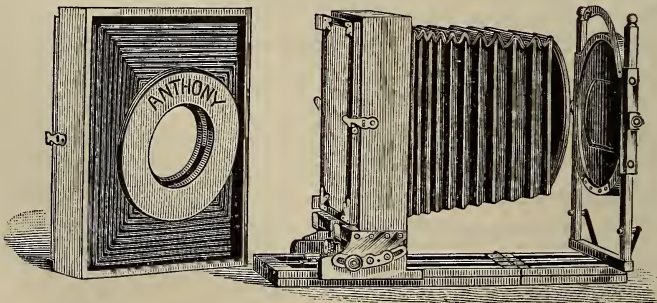
old head-rests laying around loose in the gallery. The wires in the room that connected the lamp with the electric circuit must be so-called flexible wires to allow the whole machine to be freely moved about in the room. These wires consist of a number of thin, soft wires enwrapped in the insulating material.

In order to protect the sitter from the direct rays of the arc light, and at the same time to diffuse the light properly, so that no harsh or cast shadows appear in the pictures, I employed, after many experiments, the following device, which I claim to be novel, and believe to be better than anything else heretofore employed for the same purpose. I made a light octagon frame of about 8 inches in diameter. Into this was fitted one sheet of white opal glass and another of clear blue glass—both were fastened in the frame, the opal glass toward the reflector and the blue glass toward the sitter, and the frame fastened in front of the arc light. This completed my apparatus, which could now be easily wheeled around, and enables me change the light on the sitter from right to left at a moment's notice, without the necessity of making the sitter change his position, or moving the head-rest or any of the accessories. On both sides of the background, and running on stretched wires, which were fastened on screw-eyes screwed into the wall of the room, I employed two large curtains of white muslin (light blue or gray may perhaps be better) provided with rings. I also used a white curtain on the ceiling above the head of the sitter. These and an ordinary reflector or side screen were all the means employed for lighting. By using a quick working lens, second stop, I made with extra quick plates, good cabinet negatives in about five seconds. After a few evenings' practice I succeeded in managing the light so well, that even expert photographers could not tell my pictures from those taken with daylight, and frequently expressed their disbelief, doubting that they were taken at night. In writing this article, it was not my intention to teach photographers anything new or highly interesting, but simply to give to those interested in this line a few practical hints how they can take good pictures by electric light without investing a large sum in an expensive apparatus and plant, which is generally estimated to cost from \$2,000 to \$3,000.

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### SOME NEW APPARATUS.

Our publishers are certainly very enterprising in bringing out novelties in apparatus lately. We now have to note the appearance of two new aids to photographic art: one a new combination camera, and the other a new tripod. The



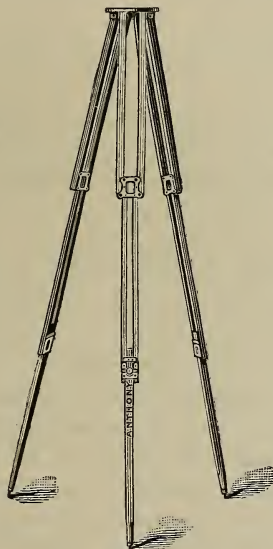
camera, which they call the "Duplex Novelette," is an adaptation of their ingenious revolving bellows camera, so that two sizes of bellows can be readily used upon the same base. This base is the same as that used with a 5 x 8 Novelette



camera, and upon it a 5 x 8 bellows and ground glass can be used; or, if desired, an 8 x 10 bellows and ground glass. The change is made rapidly by means of a brass catch in the back of the rising front, as can be seen in the cut.

It is obvious that with this new combination the use of two cameras is secured, by simply having a second bellows and back; and a great saving is attained in the weight of the apparatus.

The tripod we mentioned above is a combination of folding and telescoping movements, by which the stand is reduced to one-third of its length when packed



for transportation. This is called the "Triplex Tripod." We give a cut of this useful form of these very necessary appurtenances of the photographer. For those who like a very strong and compact tripod, we think this is a very desirable piece of apparatus.

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[From *La Camera Oscura.*]

### PHOTOGRAPHIC ENAMELS.

THE sensitive fluid is composed of

Powdered gum arabic.....	50 grams.
White sugar.....	60 "
Honey.....	30 "
Bichromate of ammonium.....	10 "
Distilled water .....	300 "

when this is hot, five drops of glycerine are added, and when solution is effected, it is filtered and flowed upon a clean glass of a size corresponding to the enamel or porcelain upon which the image is to be extended, so that the film is thin and uniform and without defect. When the plate has been dried over a water-bath and is still warm, it is exposed under a positive, in a diffused light, for about eight minutes, until its yellow color is changed to a clear green. The vitrifying powder, containing various proportions of black or flesh-colored enamel, is fanned over the film with a soft brush. During this process the film should not be blown upon to facilitate adhesion and it should be done slowly (ten min-

utes), according to the hygrometric condition of the air, and in a dimly-lighted room.

The image being developed, a fine brush is passed over it, removing any excess of enamel. The proof is then covered with collodion of the following formula:

Rectified ether.....	1,000	grams.
Absolute alcohol.....	1,000	“
Gun cotton.....	40	“

the solution being aided by a few drops of castor oil. Should the collodion coagulate or not dry perfectly, the plate can be dipped in a three per cent. solution of caustic soda.

When the image has lost all trace of the yellor color, the collodion film which bears the adhering image is disengaged by reversing it upon a dish of pure water, and the image is placed upon the enamel or porcelain.

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### Found in the Editor's Box.

PHOTOGRAPHING A REFRACTORY CRIMINAL.—Nicholas Feith, the New York burglar, who has been in the custody of the Jersey City police since Saturday, was taken to a photograph gallery yesterday to have his picture taken for the “Rogues’ Gallery.” He objected and struggled so vigorously that the attempt was abandoned. A scheme was, however, arranged by which the desired picture was secured. There is a round hole in the door of the prisoner’s pen, and the photographer put his camera up to that. Then Feith and some other men were taken into the room on the pretense that Feith was to be “stood up” for identification, and while a strange man walked up and down the line, seemingly trying to identify the burglar, the photographer succeeded in taking an excellent picture of Feith. The prisoner was furiously angry when the picture was afterwards shown to him.—*N. Y. Tribune.*

In these days of Detective Cameras a man would have to keep struggling all day long for three hundred and sixty-five days in each year to avoid having his picture taken. The aforesaid “refractory” had a little too much *faith*.

---

AN INSTANTANEOUS DROP.—“You are accused of assaulting Pete Johnson.”

“Yes, yo honah. Pete ’lowed I wuzzent no gemman. But I only hit him wunce, Sah, at the co’nah of Fo’ty-secon’ street an Fou’t h avenue.”

“Forty-second street? the policeman says he picked him up on the corner of Twenty-third street.”

“Am dat so? well I didn’t mean ter hit him as ha’d as dat, Jedge, ’deed I didn’t.”

---

GETTING LOCALITIES MIXED.—“I say, doctor, do you know how Jim Bullard is getting on since he left town?”

“Jim was shot and killed, poor fellow, only last week.”

“Is it possible!” exclaimed the shocked citizen, “where was he shot?”

“In the lumbar region, I believe.”

“In the lumber region? Why, I understood that Jim had gone to the oil region.”

# ANTHONY'S Photographic Bulletin.

EDITED BY

Prof. C. F. CHANDLER, Ph.D., LL.D.,  
Aided by ARTHUR H. ELLIOTT, Ph.D., F.C.S.,  
and a corps of practical assistants.

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Advertisements should reach us not later than the Saturday preceding the issue for which they are intended, otherwise we cannot promise to publish them in the succeeding number. It is also necessary to notify us of any alteration before the date above mentioned, and to state for what period the advertisement should be continued—whether for one, six, twelve or twenty-four issues.

*E. & H. T. ANTHONY & CO., Publishers.*

## THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.

THE regular meeting of the Society of Amateur Photographers of New York was held on Friday, May 21, 1886, at the new quarters, No. 122 West Thirty-sixth street, the meeting having been postponed from the regular date, May 11th, on account of the unfinished condition of the rooms.

The meeting was called to order at 8.30 by the *President*, Mr. BEACH, who made the following remarks:

*Ladies and Gentlemen:* In meeting you this evening, on the occasion of the opening of our new quarters, I desire to congratulate you and the society, for I believe that we have entered upon a new epoch in our career, full of promise for the future. It is needless for me to point out to you the superiority of our new quarters over those we have just vacated, for the improvements are manifest to all of you.

You will notice that we now have, in addition to a comfortable, well-ventilated meeting-room, an attractive, nicely furnished, carpeted club-room, so arranged that it can be opened on special occasions into, and form part of, the meeting-room.

Upon the floor above is to be a commodious, well-ventilated and lighted dark room, nine feet by twenty, so arranged that it can be utilized in the giving of instruction to classes during the development of plates.

There will also be roomy lockers, conveniently placed near the dark room; a room specially arranged for enlarging or reducing by day or artificial light; two private smaller dark rooms, adjacent to the studio, one of which will be fitted for wet-plate work. Ample facilities for printing will be provided. It is also the intention to have a competent photographer on the premises, capable of giving instruction to beginners in the development of plates, in printing, enlarging and other branches. We shall strive to make this place the headquarters for amateurs, not only in this city, but for the whole country; we shall endeavor to give reliable information to beginners, so that much time and money may be saved.

Social meetings, to be held on Friday, May 28th, and June 4th, instead of Wednesdays as heretofore, and the regular meeting to take place on the 8th of June, were then announced. At the latter meeting it was expected that Prof. Laudy would show his new method of making oxygen gas for the lantern.

The election of Mr. Wm. F. Wright as an active member was then announced.

The special committee appointed to prepare resolutions of respect to the memory of Mr. Gilbert A. Robertson, reported as follows:

The Society of Amateur Photographers of New York having heard of the death of their late fellow-member, Mr. Gilbert A. Robertson, which occurred on the night of our annual meeting, April 13th, and desiring to express their feelings of regret and sincere respect to the memory of one of their earliest members and first directors, offer the following resolutions:

*Resolved*, That in the death of Mr. Robertson, the society has lost a most valued and energetic member, and one whose genial character and warm heart endeared him to all who knew him. With a fine sense of the artistic, he was an accomplished and successful amateur photographer, ever ready to impart his knowledge to those who sought it, but modestly refusing to obtrude it on all occasions. "True as steel," his removal by death has caused a break in our ranks that cannot be filled.

*Resolved*, That a copy of these minutes be entered on the records of the society, and an



attested copy be sent to the family of our deceased member.

JOHN H. JANEWAY,  
FRANK G. DUBOIS,  
WM. DARROW, Jr.,  
A. HAGER,  
WILLIAM TILDEN.

Mr. BEACH—Some gentleman has been kind enough to present to me a handsome bouquet of choice flowers, intended, I suppose, to commemorate this occasion; his name I do not know, but he has my sincere thanks.

It is with great pleasure that I introduce to you to-night our fellow member, Mr. J. Wells Champney, who will give us a short talk, with free-hand illustrations in charcoal and chalk. With this brief introduction, I will leave Mr. Champney to proceed. [See page 340.]

Dr. JANEWAY—I make a motion that a vote of thanks be extended to Mr. J. Wells Champney for his very interesting and very instructive talk.

Unanimously carried.

Mr. Beach then exhibited an improved camera designed specially for instantaneous work, invented by Mr. Walter Clark, which was an improvement on a previous invention of his.

The meeting at 9.45 then adjourned.

There was an unusually large attendance of ladies at the meeting, and the room was crowded. The convenience of access from the street; the agreeable neutral colors of the paper on the walls, making a desirable contrast to the framed photographs hung thereon; the comfortable new folding arm-chairs; the cosy library and reading-room, separated from the meeting-room by sliding rosewood doors, prettily papered and handsomely carpeted, having a neat drop chandelier hanging from the ceiling, the desks and comfortable chairs, all conduced to make the meeting-room very attractive, and favorably impressed all who saw the change.

At the time the building was rented, none of these improvements were visible, and it was only through the efforts of the officers, seconded by those of the paper-hangers, plumber, painter and carpenter, that the room was transformed in time for the meeting.

Work upon the spacious dark room, which is to be well ventilated and lighted, was nearly finished. A new system of ventilation is to be carried out, by which the foul air will be automatically exhausted and discharged into a chimney, and fresh air continually brought in its place. This will enable a number of

persons at a time to witness the operation of developing.

A combination of different colored shades will be arranged in front of a window, permitting the operator to carry on development by a strong or weak light as preferred. Special closets will be provided for storing and locking up developed negatives while drying. When all the contemplated improvements are carried out, it is expected that the upper floor will be an excellent place for beginners to learn photography in a practical way. It is probable in addition to the use of the wet process, arrangements will be made for the use of the platinotype and blue processes.

With such worthy objects in view, the society is likely to enter upon a period of continued usefulness and prosperity. The auspicious opening of the new quarters augurs well for the future.

Credit should be given to Mr. C.W. Canfield, Mr. Edward Leaming, Mr. John T. Granger, Mr. Frank G. Du Bois, Mr. Wm. Darrow, Jr., Mr. Ralph McNeil, Mr. Robert Baker, Mr. H. M. Grisdale and Mr. John J. Wilson, for their assistance to the President in moving the society's effects and in the fitting up of the new meeting-room.

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## PHOTOGRAPHIC SECTION OF THE AMERICAN INSTITUTE.

REGULAR MEETING, JUNE 1, 1886.

The *President*, Mr. H. J. NEWTON, in the chair.

The *Secretary* announced the receipt of the May numbers of the *BULLETIN* and *Photographic Eye*.

The Chairman of the Executive Committee then read the following annual report, which on motion, was duly accepted.

### REPORT OF THE EXECUTIVE COMMITTEE.

This being the last meeting of the season, it is expected the committee will briefly recount the work done during the past winter.

In accordance with this custom, therefore, the committee would state that at the meeting on the first Tuesday in September, 1885, the Section was entertained with an exhibition of pictures made by members and others on the occasion of the field-day excursion and dinner at Coney Island, after which Mr. J. Traill Taylor gave a lantern exhibition, entitled "An Half-hour Ramble Among the Orange Groves of Florida."

At the October meeting, the evening was spent in listening to speeches and resolutions

concerning the death of Cyrus H. Loutrel, President of the Institute, who died June 16, 1885. Also a paper by Mr. A. Bogardus, entitled, "Then and Now." After which the Secretary read a paper entitled, "The Chemical Theory," by P. C. Duchochois.

The members of the Section and their invited friends were entertained at the November meeting with a lantern exhibition, comprising, among other pictures of unusual interest, the Flood Rock Explosion at Hell Gate, and the International Yacht Race.

At the December meeting, an illustrated lecture was given by Professor Laudy, on "The Uses and Abuses of the Stereopticon."

The January meeting was taken up with the introduction and criticism of some of the latest and most noted photographic publications, and in listening to a paper written by S. H. Horgan, entitled, "Photography for the Newspapers."

The members and their invited friends were entertained at the regular meeting in February by Dr. Van der Weyde, who recounted his early experiments in daguerreotyping; and by Dr. Ehrmann and Mr. Wm. Kurtz, who explained and exhibited photographic reproductions from oil paintings made on azaline plates.

At the March meeting a lecture was given by Mr. J. B. Gardner on "Photography;" and a lantern exhibition of choice pictures by Messrs. Von Sothen, Laudy and Fisk.

The subject discussed at the April meeting was "The Early History of Photography," with an introductory paper by Mr. J. B. Gardner.

At the May meeting there was a lantern exhibition by Mr. A. D. Fisk. Also a paper, by the Vice-President of the Section, concerning some of the early daguerreotypists of New York City, and a talk by Messrs. Bogardus and Becker respecting their early history in the art.

This completes the programme up to the present evening, which evening closes the season. To-night we are to have a lantern exhibition, prefaced by a discussion on "Orthochromatic Photography," with an introductory paper by Mr. E. Bierstadt.

For a detailed account of the above-named meetings, see ANTHONY'S PHOTOGRAPHIC BULLETIN for 1885-86.

In reviewing the work of the season, all will no doubt agree who have attended the meetings regularly, that they have been both pleasant and profitable; and the Section truly owes its thanks to the men who, for the simple love

of the art, have spent no little time and labor in preparing papers for the instruction and entertainment of the members of the institute. Thanks are also due to the trustees and officers of the institute for their liberality in providing every means in their power to sustain and forward the interests of the Section; and it is hoped that, with their continued approval and support, competent teachers, both of science and art, will be obtained to entertain and instruct during the coming season, which opens the first Tuesday, in September, 1886, and closes on the first Tuesday, in June, 1887. Hoping, therefore, that all professional as well as amateur photographers who can, will avail themselves of these meetings, the Executive Committee subscribe themselves your most obedient servants,

J. B. GARDNER, *Chairman.*

T. C. ROCHE.

W. E. PARTRIDGE.

The *President* then introduced Mr. EDWARD BIERSTADT, who read the following introductory paper on the subject announced for the evening: "Orthochromatic Photography." [See page 370.]

At the close of the reading, Mr. Bierstadt exhibited and explained to the audience, by means of the lantern and printed proofs by the artotype process, what he had thus far accomplished in orthochromatic photography. The examples shown were surely a step in advance of any of the usual methods of copying colored lithographs and oil paintings. With such examples, the aspirant to photographic honors could but exclaim: "No way but this to fortune and to fame!"

At the close of Mr. Bierstadt's explanatory remarks, Mr. T. C. ROCHE exhibited some very interesting work illustrative of orthochromatic photography, though by a different method than the one explained by the previous speaker. He exhibited a colored lithograph with green and yellow predominating. From this he showed a copy made by the ordinary collodion and silver bath process, thus demonstrating lack of sensitiveness to the above named colors; also a copy from a Stanley dry plate, prepared for orthochromatic work, from same subject, to prove the superiority of this method over any of the ordinary modes of copying. Mr. Roche stated that he used back of his lens, for copying colored work, two or more colored glasses, each different in tint, so as to neutralize the color or colors in the subject to be copied.

Mr. Roche was followed by Mr. R. GALLOWAY-BELLINGER, who also showed some fine examples by a method differing from

either of the others, and which conflicted in some respects with the first theory. Hence arose a very animated and instructive discussion respecting the faults as well as the true value of each. In regard to the use of this discussion, the least that can be said of it is, that it demonstrated the fact that there might be many ways of accomplishing the same end; but it must be left to the experience of the future to determine what is the most practicable, the most effective, and the most economic means of attaining the end all the experimentalists now engaged in this work are so anxious to reach, viz.: A photographic process that shall give truly the value of all the colors of nature.

The chairman of the Lantern Committee, Dr. LAUDY, exhibited not only the examples prepared for the special purpose of illustrating orthochromatic photography, but lantern slides of Jenny Lind, Gen. Fremont, and other bygone celebrities that had been taken by the daguerreotype process. He also exhibited slides made from some of Mr. H. J. Newton's most artistic views, the negatives of which were made along the borders of the Bronx River in cloudy weather, thus demonstrating that the shady side of nature is sometimes the more attractive and poetic.

The slides were made on ordinary Stanley plates, as also were the negatives from which they were printed, and Mr. Newton said that they illustrated that ordinary dry plates can be used for making lantern slides in place of the regular transparency plates usually sold for the purpose. He also stated that by taking the negatives to be used for lantern slides upon cloudy days, the snow-scene effects often found upon lantern slides made from negatives taken in a bright light, could be eliminated. These bits of scenery were captured within an hour's ride of the city, and it is doubtful if some of our viewists would have brought home as good, though they had traveled a hundred miles away.

According to the usual custom at the last meeting of the season, the President appointed the Field Day Excursion Committee, which comprised the names of Messrs. J. B. Gardner, A. H. Elliott, and O. G. Mason, this committee having the power to add such other persons as might be useful in accomplishing the work for which it was appointed.

The death of Nathan C. Ely, one of the oldest and most faithful officers of the institute, being formally announced, on motion the following committee was appointed to draft memorial resolutions that should be preserved

with the permanent papers of the Section, and presented for acceptance at the first meeting of the coming season, and also that a copy of the same should be sent to the family of the deceased.

JOHN P. GARRISH, M.D.,  
JOHN B. GARDNER,  
*Committee.*

A resolution was then passed that when the Section adjourn, it adjourn to meet on the first Tuesday in September, at 8 o'clock P. M. On motion the meeting then adjourned.

## FORMULAS FOR TONING BATHS.

BY H. M. GRISDALE.

[Read before the Society of Amateur Photographers of New York.]

THE following are a few formulas for toning baths which have been collected by me.

### TUNGSTATE OF SODA TONING BATH.

Tungstate of soda.....20 grains.  
Chloride of gold..... 1 grain.  
Boiling water..... 8 ounces.

As soon as cold it is ready for use. Can be used again by merely adding gold enough for the day's toning a few minutes before required for work. With each grain of gold add a grain or two of tungstate of soda. This bath becomes dark, but that does not signify anything wrong.

### SODA TONING BATH.

Chloride of gold..... 1 grain.  
Bicarbonate of soda..... 3 grains.  
Water..... 8 ounces.

Ready for immediate use, but will not keep.

### ACETATE TONING BATH.

Chloride of gold..... 1 grain.  
Acetate of soda.....30 grains.  
Water..... 8 ounces.

Prepare about twenty-four hours before using. Will keep, and gives rich, warm tones.

### PHOSPHATE TONING BATH.

Chloride of gold..... 1 grain.  
Phosphate of soda.....20 grains.  
Water..... 8 ounces.

Gives rich purple tones. Will not keep. Use soon after preparation.

### ACETATE AND CHLORIDE OF LIME TONING BATHS

used by Mr. Frederick A. Jackson, Corresponding Member, New Haven, Conn.

The solution should be kept one day before



use, and, before being immersed, the prints should be washed for twenty minutes in five changes of water.

#### ACETATE BATH.

Chloride of gold ..... 3 grains.  
 Acetate of soda . . . . . 70 "  
 Bicarbonate of soda ..... 12 "  
 Water. .... 16 ounces.

To obtain the best results, it is necessary that the bath be decidedly alkaline; and to insure good working, it is advised to have at hand (especially if it is a new bath) a bottle containing a saturated solution of bicarbonate of soda. Taking a single print, immerse it in the bath and note how it works—it is likely to be slow; if unsatisfactory, add three drops of the soda solution, then three more, and so on until it is observed that the toning commences, which should cease in ten or fifteen minutes. If a longer time is required, it would indicate that the bath was not sufficiently alkaline.

Having determined by experiment the proper condition of the bath, successive prints—a few at a time—are toned in batches with certainty of success.

The bath will keep and can be used repeatedly, it being only necessary to strengthen with chloride of gold as it becomes weakened.

In toning, it is necessary to carry it along until the prints acquire a rich purple tint, and this must not be judged by their appearance in the solution, but only when viewed by transmitted light. A properly toned print should show the purple tint, rich and warm, clear through the paper.

After toning, the prints should be washed for ten minutes in three or four changes of water, and then fixed in a hypo solution—one to twelve—with a little ammonia added, for twenty minutes.

For brilliant black and white, brown, and purple tones, the following bath is preferred:

#### CHLORIDE OF LIME TONING BATH.

Place in a graduate

Chloride of gold. .... 2 grains.

And add

Precipitated chalk. .... 20 grains.

Saturated solution chloride

of lime. .... 2 drops.

Boiling water. .... 16 ounces.

It may be used as soon as cool, but better results are obtained after ten to twenty-four hours. In forty-eight hours its activity is greatly lessened.

The prints are washed in two waters, and

removed from the third direct to the toning bath.

*Brown Tone.*—Keep the print in the bath until it assumes by transmitted light a *crimson lake* color. Two trials may be necessary before the exact tint can be obtained; when it has been reached, the print should be placed in clear water and rinsed thoroughly.

*Purple to Black.*—Continue the toning until by transmitted light the print presents a decidedly purple color—the finer, lighter portions will then attain a delicate lilac.

Should this tint appear before the shadows assume the darker purple, the print is toned, and it should be carried no further.

The shorter time the prints are kept in clear water, the better, as with the lime bath they do not bleach much; it is therefore not necessary to print so deep as to thicken the shadows.

If the paper is taken from the printing frame too soon, and is under-printed, clear and cold prints will be obtained, resembling an engraving, by adding to the above bath

Bichloride of platinum,  $\frac{1}{2}$  a grain, made neutral with carbonate of soda, for each grain of gold.

The prints thus toned will not be in the least affected or reduced by the fixing bath.

[From *British Journal of Photography*.]

## THE INVISIBLE PHOTOGRAPHIC IMAGE.

BY W. H. HARRISON.

It may not be out of place, after the long lull in the consideration of the disputed question of the nature of the developable photographic image, to revive the problem once more, since there is the possibility of more knowledge, from various sources, being now within reach upon the points at issue.

In all, or in nearly all, photographic text books, the presumed circumstance of the incessant motions of the molecules of the haloid salts of silver, and of the minor motions between the atoms of the molecule, are not taken into account. Yet, if the generally accepted modern hypothesis of the constitution of matter be accepted as true, no theory of the nature of the invisible image can be of value, without it enters into the question of the influence of the wave-motion of the interstellar ether upon the moving atoms of substances. The ideas now prevalent are, that in a solid body the molecules are swinging to and fro, but with what kind of a motion is not supposed to be known. When waves of heat beat against the solid, the molecules are driven

farther apart; they roll over each other somewhat as marbles roll over each other in a moving box; in this condition the substance is said to be in its liquid or molten state. By the application of more heat, the molecules acquire greater freedom still; they then break loose still more; they fly from side to side of the vessel containing them, and the substance is said to be in its gaseous state. When a bladder with a little air in it expands under the receiver of the air-pump, the scientific mind pictures the sides of the bladder as driven outwards by the incessant bombardment of the little particles shooting to and fro within, and clashing against each other when they meet. Mr. Crookes, by means of his experiments in high vacua, can so far exhaust a glass globe that even his radiometer vanes will not turn in it under the action of light. In such vacua the material particles left are so few, that it is believed they can travel long average distances, amounting to considerable fractions of an inch, without striking against each other; he even thinks that in some cases the molecules can travel several feet without a collision. By means of metallic reflectors inside these tubes, he can send the molecules in fixed directions and bring them to a kind of a focus; at such a focal point, if they beat against a piece of platinum wire they make it red hot.

The proof of the truth of the wave theory of light is almost crushing, and some of the best evidence on this point was contained in the experiments on interference recently exhibited by Mr. Daker before the London and Provincial Photographic Association. Some ten or fifteen years ago the ideas as to the motion of molecules were not so generally accepted as at present, but no better hypothesis for practical use can be found, and it serves to explain observed phenomena. As Professor Tyndall once put the point, light being admitted to be wave-motion, what starts it? If you will follow an ærial sound-wave, you expect to find the vibrating tuning-fork, or vibrating tongue of the organ pipe, or other moving source of sound; in like manner, if you follow up the wave of ether, you should expect to find the vibrating molecule at the other end. After tracing a wave of ether to its source, it is not probable that source will be discovered to be a metaphysical abstraction or an algebraical theorem. These ideas of his I quote from memory only; they were made, if I remember rightly, at the meeting of the British Association at Liverpool.

The hypothesis is, that when the molecules

vibrate in periodic harmony with the waves of ether, their motion is increased; and, supposing the waves of ether to be luminous, the substance so receiving them is visually opaque to those rays which impart such motion. When, however, the waves are not synchronous they pass round the molecules, and the substance is transparent. No difference but that of wave-length is recognized between waves of radiant heat and of radiant light, the apparently great difference to the human senses being due to the fact that the nervous apparatus of the human eye is so constructed as to be sensitive only to a limited portion of the rays of the spectrum. A strong solution of iodine in bisulphide of carbon is opaque to light, but transparent to those rays of dark heat which silver atoms so readily absorb; hence the strong tendency of the rays of the whole spectrum to set up a motion of separation between the atoms composing molecules of iodide of silver, thus forming, I think, the invisible photographic image upon that salt. Professor Tyndall often filters out the visible portion of a converging beam of rays from the electric lamp by means of a trough containing a solution of iodine in bisulphide of carbon; but the dark heat rays come to a focus on the other side, the same as before the visible rays were cut off, and brown paper can be ignited in the open room in the invisible focus of the rays of dark radiant heat.

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[From the Journal of the Society of Arts.]

## REPORT ON PHOTOGRAPHY AT THE INVENTIONS EXHIBITION.

BY W. B. BOLTON.

THE period covered by the Inventions Exhibition may, roughly speaking, be said to comprise half the life-time of photography—a science which has sprung into practical being within the last half century. The first portion of that time saw the young art struggle through various forms of existence, in some of which it was little better than a scientific curiosity; but five-and-twenty years ago it had fairly assumed a practical and industrial position, and had commercially, as well as from an art point of view, secured a firm hold on popular favor. Since then the growth and progress of photography has been rapid and important, and its applications have extended into nearly every branch of art, science and industry, though comparatively few of these applications are exemplified in the Exhibition.

So far as the early processes are concerned, these are fairly represented in the collection brought together by the Photographic Society



of Great Britain, which, though less complete than could have been wished, gives a tolerably good idea of the various stages through which the early science passed previous to the Exhibition of 1862. Commencing with some specimens of heliographic engraving, executed by Nicéphore Niepce as far back as 1827, this interesting collection comprises examples of each successive process of importance since introduced, including in turn daguerreotype, the first really practical method of "sun-painting," calotype or talbotype, the earliest negative process, together with the subsequent modifications of plain and waxed paper pictures. Next come the glass processes with albumen, and, later still, Archer's great discovery of the value of collodion as the vehicle in which to carry the silver salt. It was this introduction which did more to render photography practical than all the preceding processes, and the year 1851 may be looked upon as marking the birth of popular commercial photography. Examples of the modification of the collodion process, known respectively as "ambrotype" and "ferrotype," are shown, and we then pass on to the earlier attempts to produce "preserved" or "dry plates." One of the earliest of the processes coming more correctly under the former title is that of Spiller and Crookes, in which the layer of sensitive collodion was retained in a moist condition for periods of from three to twenty-one days by the application of hygroscopic or deliquescent substances. Dry-plate processes are scantily represented by a few examples of the collodio-albumen process, the oldest, and in many respects one of the best, of its class.

(To be continued.)

## What Our Friends Would Like to Know.

Q.—F. D. B. writes:—Please inform me through the BULLETIN, the cause and prevention of varnish drying in ridges?

I would say, for the benefit of A. C. J., I dry my paper over a coal-oil lamp, and I never have the trouble that he speaks of.

A.—The ridges formed in the varnish, which you mention, may be due to two causes—either the varnish is too thick and does not flow readily, or the plate is not warm enough when you flow the varnish. It is also important to flow the plate correctly to produce good results. See "How to Make Photographs," page 62, issued by our publishers.

"A Subscriber" writes:—In your answer to T. B., in issue of June 12th, you say " $6\frac{1}{2} \times 8\frac{1}{2}$  is a whole plate, consequently  $4\frac{1}{4} \times 6\frac{1}{2}$  is half size."

That the latter measure *should* be a half size there is no doubt, but it is a fact that the "whole divided into two equal parts does *not* make two halves."

In the early days of daguerreotyping, the largest plate made was  $6\frac{1}{2} \times 8\frac{1}{2}$ , called whole plate, and this name holds good everywhere at present. This was divided in two equal parts, but the results appeared too long for a portrait, and they were trimmed off one inch in length, making the measure of the *half size*  $4\frac{1}{4} \times 5\frac{1}{2}$ , and in our country this still holds good.

Divided into quarters, we had the quarter-plate of  $3\frac{1}{4} \times 4\frac{1}{4}$  inches. Cut into six parts, we had the one-sixth part (very nearly), commonly called "medium."

The "ninth" size was made by cutting the whole plate into nine pieces,  $2 \times 2\frac{1}{2}$  inches, but a Yankee afterwards found he could get ten out of a whole plate. The name was unchanged, however. Sixteenths followed.

Now our English friends call  $4\frac{3}{4} \times 6\frac{1}{2}$  a half plate, and the different interpretations have led to curious errors.

In America two halves do not make a whole, while in England they make more than a whole. Cannot we join hands, and split the difference in half-and-half?

[We note the difference mentioned by "Subscriber," and agree with him that  $4\frac{1}{4} \times 5\frac{1}{2}$  is the commercial half size. But the confusion which arises in the use of these trade terms is bewildering, and it is much better to give dimensions at once.—EDS. OF BULLETIN]

DEAR BULLETIN,—On page 351 of your issue of June 12th, I find an answer to W. N. C. regarding a ruby-red negative. I would like to state my experience with one of my own. I had on my shelf a bottle of Cooper's developer, pyro, sulphite and carb. soda, which having been used but for two or three plates, I had poured into an empty bottle to use on some later occasion. Having made two normal exposures, I filtered the contents of said bottle, and immersed one of the plates in it. After waiting for about five minutes (it seemed much longer), and seeing nothing appearing on the plate, I added more of the *concentrated* Cooper's developer, and repeated additions, a little at a time, until the original five ounces had grown to seven ounces in bulk before the picture began to appear. After it



had become sufficiently strong, I washed it well in water and immersed it in a solution of alum, citric acid and water, and let it remain for full thirty minutes. Then washed, fixed and washed again. When perfectly dry, I had a negative of wrought steel as regards strength, but viewed by reflected light it was a beautiful green, and transmitted light, not a deep ruby but a decided shade of that color approaching closely a gold-flashed ruby glass. The remaining negatives were developed in a fresh mixture and came out clean and crisp, in fact all that could be desired.

I had heard of green fog, but never experienced it before, and some of your readers who go deeply into the whys and wherefores may be able to discover why the old developer should act as it did. The interval between its first and last using was about a week, and there was a brown deposit which I filtered out. I presume this deposit, whatever it was, is the anti-green-fog-producing chemical.

AMATEUR.

Q.—J. D. S. writes:—Will you please inform me, through the columns of the BULLETIN, how I can eliminate or destroy the nitrate of ammonium in my printing bath without damaging the silver?

A.—Evaporate the bath to a small bulk, say two or three ounces, if possible, then add strong nitric acid, two or more drams, according to bulk of fluid, and heat the mixture until all effervescence ceases, and the mass is melted. This will eliminate all the ammonia salts, and

also the nitric acid used to get rid of them. The addition of a little pure nitric acid, then some water, and heating to boiling, will give you all the silver in solution that you can recover. By filtering and testing with actinohydrometer, you will find out how to dilute your fluid to the proper strength for a new bath.

## Views Caught with the Drop Shutter.

WE regret to note the death of HENRY T. NEIDHARDT, the dry-plate manufacturer of Chicago, who passed away in that city on the 3d of June.

WE recently had a very pleasant call from Mr. JOSEPH J. ACKWORTH, of England. He is on a visit to this country and proposes to take an extensive tour through the States, visiting Niagara Falls and other places of interest.

Mr. GEO. G. ROCKWOOD, of Union square, has gone to Europe for a trip. We wish him a pleasant voyage and a safe return.

THE employees of PACH BROS., New York, defeated those of FREDERICKS at base-ball on two separate occasions lately. The Pach nine are so elated over their victories that they are desirous of meeting a nine from any other photographic studio in the city.

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F. W. GUERIN.

"That's my Pussy"

✻ On a "Cramer" Dry Plate. ✻

Printed on N. P. A. t e n e M u n i c i p a l P r i n t e r



# ANTHONY'S Photographic Bulletin.

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Prof. **CHARLES F. CHANDLER**, Ph.D., LL.D., *Editor*.

**ARTHUR H. ELLIOTT**, Ph.D., F.C.S., *Associate Editor*.

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JULY 10, 1886.

Vol. XVII.—No. 13.

## THE PHOTOGRAPHERS AT ST. LOUIS.

NONE but those who were at the great meeting at St. Louis can have any idea of the good time we all enjoyed. No matter from what side you look upon the events of those four days of the meeting, whether intellectually or socially, they were one round of pleasure from morn till eve, and the man that went away disappointed with his visit we have yet to see. Personally we had some idea of the generous good feeling of our Western cousins, but their efforts on this occasion eclipsed all our former experiences. The St. Louis brethren of our profession were thoroughly united in their efforts to entertain all their visitors, and the manner in which they did it must be felt to be appreciated. No words of ours can tell of the thousand little kindnesses that were showered on all, and the lavish expenditure of time and money that was bestowed upon everything that made the Convention the grand success that it has proved to be. The leading spirit of the Convention was Mr. G. Cramer; but Messrs. Guerin, Wells, Edgeworth, Somerville, Clark, Strauss, and many others ably seconded his efforts; indeed he would have been helpless without them. The ladies also added their influence to give grace and dignity to all the events of the Convention. Mrs. Cramer was indeed the better half to her never-tiring husband on all occasions, and it was a great pleasure to note the zest with which she entered into all his many schemes for the entertainment of the guests of the St. Louis photographers. Nor must we forget Mrs. Strauss, Mrs. Fitzgibbon-Clark and Mrs. J. C. Somerville, who were all ministering angels to the camera knights.

In regard to the business meetings, no one can praise too highly the thoroughly business-like manner in which they were conducted. *President* POTTER, gifted in many ways with those traits of character that are necessary for a presiding officer, conducted the meetings with dignity, sharp decision, a thorough regard for the feelings of all, and with malice towards none. When the business sessions closed on Friday, all the matters that filled the programme of the four days' meetings had received the attention of the members; and this without an extra session, and only one hour behind the stated closing time. Such dispatch of business speaks volumes for the executive ability of the retiring officers, *President*, *Secretary* and *Treasurer* alike. Indeed the hard work of *Secretary* McMichael and the business tact of *Treasurer* Carlisle made all this possible, and they also deserve the best thanks of the association. We are satisfied that these two men have done more to make the association the success it is now admitted to be, than any of its other members. A large number of extremely interesting

papers were read at the Convention, and will appear in the pages of the BULLETIN. The general character of these papers was in advance of those presented last year both from a literary and technical point of view, and the judges that are to award the cash prize of one hundred dollars have a large fund of material from which to make the award. Some of these papers showed an amount of literary ability and fine feeling that was a surprise to many of those who heard them, and called forth many rounds of applause.

The pictures exhibited were a surprise to everybody both in numbers and quality. The photographer that did not see them missed one of the greatest opportunities of his life. The master hands of the various artists vied with one another in portraiture, views and compositions, and the multitude of their productions showed that they had worked for the good of the art they love.

We cannot close this rapid and imperfect review of our impressions of the grand meeting at St. Louis without expressing our sincere thanks to the many friends of the BULLETIN who greeted us at St. Louis, for the hearty good feeling we felt that they entertained for us. Our stay in the great city was full of the most interesting events socially and otherwise, and to those who made our time fly so pleasantly we are deeply grateful. To Mr. Cramer we are especially indebted for numerous kind attentions and a personal interest in us that we fear we ill deserve.

Chicago must look to it that she is not found wanting when the association meets within her walls next year; and we hope that the grand progress of our association will be maintained there, while many glories shall be added to its onward march.

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#### EDITORIAL NOTES.

In a recent discussion on "Copying" before the Edinburgh Photographic Society, Mr. T. G. Whaite made some important remarks upon the use of gelatine plates for the purpose. A number of people are of the opinion that wet collodion plates are best suited for the production of copies. But Mr. Whaite recommends a slow gelatine plate, giving full exposure, and a well restrained strong *potash* developer. We think this advice is good, and recommend our readers to give the method a trial with, say, Beach's Potash Developer, and bromide of potassium as a restrainer.

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ALEXANDER GRAHAM BELL and his cousin, Dr. Chichester Bell, have recently been experimenting upon the effect of sound upon a jet of water, and have taken photographs of the resulting vibrations. A jet of water is made to vibrate by sound, and either by taking reflections of some part of the stream, or by making the latter opaque and interposing it between the camera and a source of light, a negative corresponding to the vibrations is obtained. A relief plate can be made from this negative, which, when made to act upon a movable diaphragm, produces vibrations upon the air and reproduces the original sound. Should this new development prove practicable, it will become possible to report the words of a speaker by machinery instead of the laborious methods of the stenographer, as is now usually practiced.

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We note the organization of the Plymouth County Camera Club of Brockton, Mass. It is apparently composed of professional photographers who are united

in an effort to maintain prices in photographic work. They have adopted a regular schedule of rates which they hope to extend through the county. D. T. BURRELL is President of the Club, and C. E. Foye, Whitman, Mass., Secretary.

At the St. Louis meeting of the Photographers' Association of America, the following gentlemen were elected as officers for the ensuing year: *President*, G. CRAMER, of St. Louis; *Secretary*, H. S. BELLSMITH, of Rochester, N. Y.; *Treasurer*, G. M. CARLISLE, Providence, R. I.; *Executive Committee*, JAMES LANDY, of Cincinnati; W. V. RANGER, Syracuse, N. Y. The place of meeting selected is Chicago; the time will be announced when the final arrangements are completed.

*President* POTTER appointed the following gentlemen as a committee to award the cash prize of \$100 for the best paper presented at the Convention at St. Louis; James Landy, F. C. Beach, and John Carbutt.

THE two gold medals for foreign exhibits offered by the Photographers' Association of America, were both awarded to pictures exhibited under the auspices of the BULLETIN. The gold medal for portraits was given to Fr. Mueller, of Munich, Germany, and the gold medal for pictures other than portraits to George West & Sons, Southsea, England. The portraits of Mueller are fine specimens of photography printed on the well-known N. P. A. albumen paper. The pictures of George West & Sons are instantaneous photographs of English yachts, and probably the finest views of the kind ever seen in this country. Our publishers have kindly consented to allow them to be on exhibition at their store, 591 Broadway, New York, where all our friends can see them, and also the medals that were awarded.

We invite all our readers and friends to come and see these pictures, both German and English, at an early date, as we expect to have to return them to their owners in a week or two. The exhibition will cost you nothing, and we feel sure that it will repay the time necessary for a short visit.

WE are greatly indebted to Mr. J. H. Sherrard, of Messrs. Hyatt & Co., St. Louis, for courtesies during our stay at the Convention; more especially for his kind assistance in obtaining an efficient attendant at our headquarters in the Exposition Building.

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#### OUR ILLUSTRATION.

THE pretty little child is an excellent subject for the artist, and the fine results obtained by Mr. Guerin speak well for his good taste in posing and lighting, as well as for the fine quality of the plate. We are very much pleased to be able to give this example of the work of our two St. Louis friends, whose generous hospitality we have so recently experienced. The fine printing on the N. P. A. albumen paper speaks well for this particular brand and the care bestowed upon the finishing of the pictures by Mr. Guerin.

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WHILE at Savannah the other day, a Northern gentleman got two shots at Jeff Davis. Of course it will be understood they were harmless "shots" with a camera.



### EXHIBITION OF PRIZE PICTURES.

THE German and English pictures that obtained the gold medals for foreign exhibits at the St. Louis Exhibition are to be seen at the store of our publishers, 591 Broadway, New York. The other pictures of the German exhibit, which include some extremely fine landscape views, will be on exhibition at the same time. All are invited. No charge for admission.

### TRICKS OF FORTUNE-TELLERS.

BY H. G. P.

To the Editors of ANTHONY'S BULLETIN.

FOUR years ago a young lady had her fortune told at Coney Island, and the fortune-teller presented her with a photograph of her "future husband." This morning the young lady showed me the photo, which turned out to be a *copy* from a photograph of myself made some years ago. It was not from the original negative, but copied from one of the original prints.

### PHOTOGRAPHY IN GERMANY.

BY DR. H. W. VOGEL.

*Cyanin Plates—Emulsion on Bristol Board—How to make Negatives 7 x 9 from Plates 5 x 8—Tanning and Developing in One Operation—Artificial Light in Photography—Cheap Magnesium Light.*

IN your valuable journal No. 9, page 265, I find a communication from Dr. Schumann in regard to "photographic news from Germany in No. 6 of the BULLETIN." Your correspondent "Helios" writes that Scolik's erythrosin plates, according to the assertions of the last-named gentleman, possess a remarkable orange sensitiveness. Schumann denies that. If permitted to give my own opinion in the matter, I have only to call attention to the fact that Scolik has experimented with pictures and color-tables, but not with the spectrum; and that in taking a color-table with erythrosin plates, the orange peroxide of lead (in German, *meninge*) acts very distinctly on Scolik's plates. The reason is, that the orange peroxide reflects a good deal of yellow rays. On the other hand, I agree with Mr. Schumann that the orange of the spectrum has only very little action on Scolik's plates, and that cyanin works far better for those parts of the spectrum. But I confirm what your correspondent says in regard to the practical value of plates prepared with cyanin after Schumann's formula (No. 6 of the BULLETIN.)

I highly esteem Schumann's researches, but I must confess that, as far as my experience goes, I have not succeeded with his cyanin formula on Monckhoven plates. Investigators like Mr. Obernetter, of Munich, and Captain Himly, of Berlin, are of the same opinion. I believe that Mr. Schumann has succeeded in coloring certain home-made emulsions of low sensitiveness with cyanin, and I hope that he may be still more successful; but I do not believe what several correspondents of the *Wochenblatt* maintain, that cyanin plates should be from 30 to 40 times more sensitive than ordinary plates, and that they can be used for taking orthochromatic pictures in daylight without a yellow screen.

A great drawback of the cyanin plates is their quick decomposition. Forty-eight hours after preparation they are useless.

It is different in the presence of other coloring matters. I have found that cya-

nin in connection with aniline red can be made considerably more durable, so that I can keep such plates for months without any disadvantage, but care should be taken to use only a small quantity of the cyanin. The inconstancy of this coloring matter is remarkable. In aqueous solution it decomposes even in the dark.

Mr. Striedtbeck, of Strasburg, has lately drawn attention to Thiebaut's emulsion card-board. Thiebaut does not put the emulsion upon glass or paper, but upon card-board, and obtains a plate that way which is light, but still sufficiently stiff to be put in place of the focusing screen. The card-board has the disadvantage of not being transparent, permitting very limited control during development. Mr. Striedtbeck gets over this difficulty in an original manner, and solves at the same time the peculiar problem of making  $7 \times 9$  negatives upon  $5 \times 8$  plates. He writes:

Instead, according to Thiebaut, of developing upon the card-board, and then fixing, drying, washing and stripping, I strip the film before developing, and place it in water, where it remains from five to six minutes. If the film is good, and of even thickness, it will stretch evenly, leaving the edges parallel. The size  $13 \times 18$  cm. enlarges to  $21 \times 27$  cm. The development takes place thereupon in the ordinary way. I always use glass trays, and I have made one  $21 \times 27$  cm. in the following manner: Upon a glass plate I fastened, with some water-proof putty, the four sides, which are 4 cm. high.

These dishes are cheap and durable, and can be used for years without needing any repair, but they do not stand the alkaline developer very well.

When the film has expanded to the size  $21 \times 27$  cm., I pour upon it the necessary oxalate and iron. Very little solution is required. I can follow the gradual appearance of the pictures completely, and as well as with a glass plate. Intensifying not being very agreeable, I try to give the developer the necessary strength. It is better to give too much than too little. The film adhering to the glass, it is very easy to pour off the water. After this I wash, place the plate in an alum solution and then fix. At the same moment the film will contract from  $20 \times 26$  to  $18 \times 24$  cm. The fixing is just as easy as with glass, but the time is considerably shortened, the fixing solution attacking the bromide of silver from both sides. I wash, and, to obtain a greater durability, I think it is good to put the plate in chrome alum. One hour's washing is sufficient to remove every trace of the hypo.

Finally I place my negative film upon a glass plate, doing this under water; then I take it out of the water and let the latter run off. Around the edges I paste paper strips, and then I let it dry.

The picture is thus stretched and will not contract any more. If desired, it can be removed from the board by cutting the paper edges outside, but this is unnecessary.

Fr. Wilde, of Gorlitz, has lately communicated to me his experiments to unite the processes of tanning and developing in one operation by adding chrome alum to the oxalate developer. But this cannot be done with the alkaline pyro developer, as it precipitates the alum. Mr. Wilde gives the following formula:

A.

Chrome alum (pulverized).....	20 grams.
Neutral oxalate of potassium.....	200 "
Water.....	800 c.c.



## B.

Chrome alum (pulverized).....	12 grams.
Sulphate of iron.....	150 "
Sulphuric acid.....	8 drops.
Water.....	450 c.c.

For use I mix 4 parts of A with 1 part of B. The mixture has a ruby-red color and protects the sensitive film during developing better against actinic light, so that the developing can take place without any danger under a pretty bright yellow light.

In Germany they have lately published a good many reports about the application of artificial light in photography. This is always in reference to yellow light, either kerosene or gas-light. These have the great advantage of at once furnishing orthochromatic pictures, and this is of great importance, even for portrait photography, because yellow spots on the face will show much less upon orthochromatic plates than upon others, and hardly one-third of the retouching is required. But one disadvantage of this artificial source of light is its great heat. The electric light being free from this may have a good future for portrait photography.

Lately a long-forgotten artificial light, which is not yellow, but blue, has suddenly made its appearance again. This is the magnesium light. Heretofore it was too dear, but Shering manufactures it at present at one-sixth of the former price, so that 25 cents will be sufficient for an hour's use of this light. In consequence of this the magnesium light has found a ready application for ordinary plates.

Herr Baltin, from the Photographic Verein of this place, showed an interesting view, made in company with Mr. Kuntze, of Potsdam. It is the interior of a vault in the Friedenskirche at Potsdam. This entirely dark place was lit by the magnesium light. To the right and left of the entrance, covered by masonry, one meter each of magnesium wire of four thicknesses was burned. The negative is a complete success. Besides the magnesium wire some candles were lit, forming the impression as if they were the illuminating power, although they added little or nothing towards an increase of the illumination. The view was executed with a Steinheil aplanat of 14 lines with second smallest diaphragm. The time of exposure was about one minute.

The magnesium views are of course now considerably cheaper, using only about one-sixth of the former quantity of the wire, the present dry plates being about six times as quick as the former wet plate. The glaring light of course acts a little blinding upon the eyes, and to avoid this, Mr. Becker has tried to throw the light upon the ceiling by means of a reflector while taking a view of a drawing-room. The result is a general good illumination, which enabled him to take a view in 45 seconds.

The Verein zur Forderung der Photographie lately made an attempt at night in its meeting-room at testing all the magnesium lamps at present in the market, viz.:

Two clock-work lamps, with two wires each, made by O. Ney.

Three small hand-lamps, made by Wallroth, Jun.

One lamp with handle, made by Lippin & Masche. These lamps consumed seven wires of 60 cm. per minute, and that of Herr Ney had an arrangement by which the magnesium fumes were removed to the outside through a pipe.



The views were taken by Messrs. Halwas, Gädicke, Stoll and Martin. The largest part of those present united, made a group too large to be uniformly illuminated by artificial light, the object being therefore the most difficult for such light.

The illumination took place from three different points. The reflectors had to be removed from the lamps, the light being too strong. The fumes did not interfere much, the open windows permitting a constant change of air. The small heat these lamps give is remarkable, on this point surpassing even the electric light. The time of exposure was 30 and 50 seconds. The plates were at once developed in the same place, and some of them were a complete success.

I am convinced that night photography with the magnesium light will become fashionable during the next season, and be particularly in use for fancy dress balls, etc.

BERLIN, May 31, 1886.

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### THE PRIZES AWARDED AT THE ST. LOUIS CONVENTION.

#### ASSOCIATION PRIZES FOR AMERICAN EXHIBITS.

*Gold Medals (for portraits).*—Decker & Wilbur, Cleveland; B. J. Falk, New York; J. W. Gehrig, Chicago; J. Landy, Cincinnati; J. A. H. Parsons, Wheeling, W. Va.; J. F. Ryder, Cleveland.

*Silver Medals (for portraits).*—G. Dabbs, Pittsburgh; S. J. Dixon, Toronto; G. M. Elton, Palmyra, N. Y.; Gilbert & Bacon, Philadelphia; H. McMichael, Buffalo; C. W. Motes, Georgia.

*Gold Medals (for pictures, not portraits).*—Geo. Barker, Niagara Falls, N. Y.; W. H. Jackson, Denver, Colo.

*Silver Medals (for pictures, not portraits).*—E. H. Lincoln, Dorchester, Mass.; G. B. Wood, Philadelphia.

*Special Silver Medals.*—T. R. Burnham, Boston, for largest picture from single negative; Eastman Company, of Rochester, for permanent bromide enlargements.

#### ASSOCIATION PRIZES FOR FOREIGN EXHIBITS.

*Gold Medals.*—Fr. Muller, Munich, Germany, for portraits; G. West & Sons, Southsea, England, for pictures, not portraits.

*Silver Medals.*—Schultz & Suck, Germany, for portraits; R. Hansa, Germany, for pictures, not portraits.

#### THE ANTHONY PRIZES.

\$50 cash to Irving Saunders, Alfred Centre, N. Y., for best 18 x 22 portrait.  
do. W. E. Purviance, New York, for best 8 x 10 views.  
do. G. M. Elton, Palmyra, N. Y., for twelve best cabinets.

#### THE CRAMER PRIZES.

\$100 cash to Geo. Barker, Niagara Falls, N. Y.  
do. J. W. Gehrig, Chicago.  
do. Gilbert & Bacon, Philadelphia.  
do. S. J. Dixon, Toronto.  
do. H. McMichael, Buffalo, N. Y.

## THE HARRIS &amp; KITTLE PRIZE

was awarded to F. F. Tomlinson, of Detroit.

## THE ACME PRIZE

was awarded to W. Fitz-Guerin, St. Louis, Mo.

## THE ROBERT DEMPSTER PRIZE

was awarded to Montford & Hill, Burlington, Iowa.

The following are the names of the Committees of Judges:

*For the Association Prizes.*—F. W. Guérin, J. Mullen and J. D. Cadwallader.

*For the Anthony Prizes.*—C. T. Stuart, Hartford, Conn.; A. D. Beckwith, Cleveland, Ohio; David Cooper, Rochester, N. Y.

*For the Cramer Prizes.*—James Landy, Cincinnati; F. Gatchel, Detroit, Mich.; S. V. Courtney, Canton, Ohio.

*For the Harris & Kittle Prize.*—C. Gentilé, Gayton A. Douglass, and M. A. Seed.

The Committees on the Acme and Dempster prizes we did not learn.

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 REMINISCENCES OF THE CONVENTION.

MRS. FITZGIBBON-CLARK presented the association with a handsome silk banner about six feet by three feet, which was the work of her own hands. The rich embroidery work upon this beautiful present must have cost the good lady many hours of patient labor, and it will be carefully kept by the association until its tattered shreds, like those ancient battle flags of the Middle Ages, shall tell to future followers of our art that gentle hands wrought for the artists of to-day, and gave them an emblem to lift their eyes to which is "a thing of beauty and a joy forever."

MR. M. A. SEED took a party to his dry-plate works at Woodland, a beautiful suburb about eight miles from St. Louis. Six carriages took the guests through the principal part of the city *en route*. A collation was served under the trees near Mr. Huisekamp's residence. Among those who went were David Tucker; Mr. Butts, of D. Tucker & Co.; H. Q. Sargent, G. R. Angell, A. M. Harris, W. H. Walmsley, W. G. Entrekin, R. B. Mullett, Henderson George, A. D. Edgeworth; Mr. Sheen, of Sheen & Simpkinson; W. H. Robie, D. H. Roberts; Mr. Prince, of Blair & Prince; Mr. Decker, of Cleveland; George Murphy, and Mr. Cadwallader, of Ohio. Messrs. M. A. Seed and J. P. Buss did the honors of the occasion, assisted by Madame Huisekamp.

ON the evening of June 23d, in the handsome parlors of the Southern Hotel, Mr. Landy and a number of Mr. Cramer's personal friends presented him with a gold-headed cane, together with the following letter:

THE SOUTHERN, ST. LOUIS, June 23, 1886.

WE, the undersigned, desire to express in a tangible form our full appreciation of the rare courtesy and generosity of our *good friend* Mr. Cramer, and to that end subscribe the sum of one dollar towards the purchase of a gold-headed cane, to be presented to him as a token from his *personal friends*—J. Landy,



George Ayres, W. Irving Adams, Wilfred A. French, Edward L. Wilson, J. F. Ryder, D. K. Cady, J. C. Somerville, David Tucker, Gayton A. Douglass, Sheen & Simpkinson, H. Q. Sargent, W. H. Robie, T. W. Patterson, L. M. Prince, W. H. Walmsley, Edward Cope, Albert M. Harris, D. H. Roberts, G. R. Angell, W. A. Webster, Ralph H. Golsen, O. C. Allen, R. B. Mullett, W. H. Potter, L. W. Seavey, E. Decker, W. P. Buchanan, W. V. Ranger, Henderson George, C. Gentilé, H. McMichael, George Barker, C. Heimburger, C. F. Stuart, W. J. McCormick, P. S. Ryder, Mrs. Fitzgibbon-Clark, J. H. Meyer, George Murphy, Sweet Wallack, Dr. A. H. Elliott, R. Goebel.

When Mr. Cramer's friends had all assembled, Mr. H. Q. Sargent was elected chairman, and presented the cane with the following remarks:

"I thank you, ladies and gentlemen, for the honor of representing you on this pleasant occasion. I only regret that you have not selected some one who could more appropriately and adequately express your sentiments.

"To strive to so live that we shall merit the approbation of our fellow men, is a worthy and noble ambition. To have the *assurance* that we possess their confidence and approval, is one of the most gratifying results of an upright and honorable life. We have with us here to-day an associate and friend whom we delight to honor, and whose nobility of character and conduct receives our most hearty commendation.

"Mr. Cramer, it is with the greatest pleasure that I present to you, in behalf of your friends here assembled, this slight token of the high admiration and deep esteem with which they regard you. Its own value is but little, but we trust it will serve to testify to you the wealth of friendship and, I might truly say, the *affection* which prompted its giving.

"By your frank and manly dealing, by the sincerity of purpose manifest in all your acts; by the earnest interest you have shown in our success, whether as photographers or dealers; by your liberality, which is unparalleled and almost without limit; by your open-hearted and generous hospitality, which has shown no distinction to wealth or position, you have well 'merited' our hearty admiration and esteem. And we present this testimonial, not in any official capacity, for our relations are varied, but as *friends* sincere and true. We most earnestly hope that many years may pass before you will need its assistance and support; and we trust the memories of this occasion may in some degree brighten and cheer your future labors in life."

Mr. Cramer, in reply, said: I cannot understand how it is that you selected me to do me this honor, and when I get old I hope I shall use it as a support, and the memory of this occasion will fill my heart.

The presentation was a great surprise to Mr. Cramer, and he was deeply affected by the kind action of his friends.

The handle of the cane bore the following inscription:

To G. Cramer,  
From His Personal Friends.  
St. Louis Convention, 1886.

THE Cramer dry-plate works were visited by the stock-dealers and others on Wednesday morning. About thirty gentlemen in eight carriages were conducted



out by Mr. Cramer. Among those present were J. Landy, W. I. Adams, W. French, E. L. Wilson, D. K. Cady, David Tucker, Gayton A. Douglass, Mr. Sheen, H. Q. Sargent, W. H. Robie, T. W. Patterson, W. H. Walmsley, Edward Cope, G. R. Angell. On their return, the party stopped for refreshments, which were served under Mr. Cramer's auspices in his usual generous manner.

On Friday afternoon, after numerous requests from others to visit his factory, Mr. Cramer concluded to stop operations in the dry-plate works and take everybody out who wished to see the place. He therefore chartered six horse cars, and these, filled with the members of the association, ran out to his works.

Our own visit to this interesting manufactory was very pleasant indeed, Mr. Cramer being particularly kind and attentive to us, and taking much pains to explain the many devices that he uses.

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On the afternoon of Thursday, June 22d, the St. Louis photographers took their guests for a ride upon "The Father of Waters" to Montesano Springs, a trip of about 25 miles. A more perfect day could not have been selected for this delightful excursion. Everything that kind hearts could suggest, everything for the delight of the palate as well as for the heart and mind, was there to beguile those too fleeting hours. To say that all enjoyed the trip is to speak mildly; it was a perfect round of revelry. Our St. Louis cousins deserve the most hearty of hearty thanks for all their kind, thoughtful, and generous hospitality upon this occasion. Not a single incident occurred to cast a cloud over this well-planned and most generous display of hearty good feeling.

Of course everybody wanted to take his camera, and the number of these instruments aboard was a curious spectacle. There was our friend with the velvet cap, with gold letters marked "Photographer" for fear that somebody should take him for anything else. He toiled around with a large box (12 x 14 or thereabouts) and photographed everything he saw. The Detective camera was also to be seen in all sorts of corners and at all kinds of subjects. The innocent-looking Satchel camera interested a great many of those aboard and caught many an unsuspecting couple musing and deeply interested in the waters of the great river. But it is useless to go into details about the many things that proved sources of pleasure and entertainment upon this delightful trip. For those who wished to dance, a string band furnished most charming music. A set of colored minstrels amused large crowds, both with their songs and gestures. One individual had such a large mouth that when it was open, little else but this cavern could be seen, and many pictures of this abnormal development of the human face were secured by those aboard.

For those who wished to sit around and enjoy the delightful sail, a very fine brass band discoursed music to their sympathetic ears. Airs from the Mikado, melodies of many lands, and those thrilling war songs that were born twenty years ago, floated on the gentle air that proved so grateful to all.

At the Springs, a delightful resort of St. Louis excursionists, the various members of the association spent their time stretched upon the fine grass lawns that surrounded the hotel, strolled around among the trees, and were also photographed by many cameras.

The return to the city was as pleasant as the trip away, and all who enjoyed that glorious day are filled with gratitude to the St. Louis photographers, their wives, daughters, sweethearts and all. The ladies made the trip particularly pleas-

ant by their presence, and the hearty good-will with which they entertained the numerous guests.

ANOTHER delightful incident that practically closed the round of enjoyments at St. Louis, was the presentation of a gold-headed cane to the retiring President, Mr. W. H. Potter. This occurred in the parlors of the Lindell Hotel, on Friday evening, June 25th, before a large crowd of the members, and the presentation was made by Mr. C. T. Stuart, of Hartford, Conn., on behalf of all the members of the association. Mr. Stuart said:

*"Gentlemen and Brethren,—*The sweetest lives are those to duty wed, and the performance thereof. Acting the manly part, such is the noble record of our out-going President, of whom we feel so proud. *Mr. President POTTER*, I have been deputized to perform the pleasant duty of conveying to you the sincere regards entertained towards yourself by the Brethren, for the very able and impartial manner in which you have filled your office and conducted the affairs of this great association. As we, like yourself, have its best interests at heart, while proudly watching the photographic child, we are also much pleased with the brilliant record you have made and have ever been with you sympathetically for its advancement. As a further and more tangible evidence of our appreciation of your impartial career as President, we have concluded to 'cane you,' and in such a manner too, unlike some of your earlier canings, you will remember it pleasantly, and it will also serve to you as a substantial reminder of the high esteem in which you are held by the members of this association. May the cane prove to you while walking along the 'Road of Time' a veritable 'Staff of Life,' and in years to come remind you of the mutually pleasant associations of the past."

Mr. Potter was completely surprised and could only reply in a few words, which were characterized with his usual honest and heartfelt appreciation of kind acts and sympathy for the welfare of the association.

The handle of the cane bears the inscription:

W. H. Potter,  
Our President and Friend.  
Convention P. A. of A.,  
St. Louis, 1886.

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#### PRESIDENT POTTER'S ADDRESS AT THE ST. LOUIS CONVENTION.

*Ladies and Gentlemen of the Convention,—*By the gracious dealings of a kind Providence we are again permitted to assemble in this, our seventh, annual convention, to renew the devising of means and the discussion of plans by which we may attain unto a larger life, a broader culture, and a more enlightened and generous enthusiasm; for, as I take it, what we do here cannot be confined altogether to the technical or professional, but it takes in the moral and social, as well as the business, the intellectual, and the æsthetic conditions of our environment. And we must have progress in all these directions would we continue to live as an association. Even now, some one is drifting into poetry, and shall we not also, muse?



The time is ripe now, or will be by Thursday, for a convention song, and I hope our poets and musicians will put their heads together and give us a convention rallying song. A tree that is seven years old ought to put forth some flowers.

Then again, our chance at legislation and general discussions is a school-master to us in parliamentary proceedings; and, in this connection, I will say that considerable advice has been given me to give the young men a chance, to consider them in the appointment of committees, etc. With regard to this, it may be said the young man must first demonstrate what kind of stuff he is made of; must give us a knowledge of the kind of talents he possesses. It is easy to charge—and, as it has a considerable show of reason, is likely to be believed—that a presiding officer appoints weak or unknown men on committees that he may the more readily influence or control them; or that he fears that the luster of an eminent committee may dim his own. Therefore I hope the ambitious young man will seize his opportunity to step to the front and give us a sample of his metal. It is creditable for him so to do, and I promise him all due consideration shall be shown him. When one has given evidence of his fitness, there is no difficulty about the bestowal of the honor due to his talents. In the meantime “all things come to him who waits.” Plant and water and patiently wait for the increase, which will surely come.

While the photographic business for the past year has been moderately prosperous, yet the outlook for the immediate future is not altogether reassuring. Need I tell you that prices are down and are still tending downward. Ought we not to face the danger of our situation, and see if we cannot provide a remedy? For, if a new levee is not built, or a new channel dug, or the rubbish taken out of the old one, the floods of folly will sweep us as a profession out of existence; or the sand and drift will so beslime us as to make us a reproach and a by-word to society.

The evil at the root of this matter is “Man’s inhumanity to man.” Too many assume the rights of a patentee on their town and aim for a monopoly of its photographic business, their motto being to keep out and drive out all opposition at whatever cost. They laugh to scorn the moral principle that they are their brother’s keepers, and that the duty rests upon them to help bear his burden. But, gentlemen, the law of these moral obligations is just as unchangeable and eternal as the law of gravitation or the laws of health, and if violated, the penalty will just as certainly follow; hence our deplorable condition to-day. We are our brothers’ keepers. It is our duty to bear our burdens and help bear our brothers’ burdens. Let us illustrate. It is my duty to keep prices up to that point which will give a fair return for the capital and time, labor and skill employed, and enable me to retain a proper social position. Should my peer and competitor do likewise, each will bear his own burden, and also help the other to bear his, for we are bound to stand or fall together.

You and your peers may be of a higher station, and if you help keep together in your station you not only help each other, but you help me to keep in mine, and I and my peers in turn help those in the station below us to hold their own. By the decrees of the Almighty we are under these moral duties and obligations, but we have violated them, and are but suffering the legitimate consequences.

Feeling that a proper recognition of and conformity to these principles fur-



nishes the only solution to our present difficulties, I shall try to bring the argument a little nearer home to each of us. Go into any city, and you will find a certain number of galleries where the productions are so near the same as to quality, that only an expert could say whose are the best—and the public is not an infallible expert. In all such cases you will also find that each man's trade hinges mainly on his personality, which, by the way, is a very tangible thing. The ways and the manner of conducting business attract a certain class to one, and the different ways and methods of the other attract a different class of customers. Now, should these two get to fighting for each other's trade, they would only succeed in killing the goose that lays the golden egg.

You will find also the different stations or grades already mentioned, in cities where they have not yet attempted to cut each other's throats. In our city all the figures from two to eight dollars per dozen for cabinets are represented. Should some of us lower our prices the equilibrium would be disturbed, and the play of destructive forces would set in.

I would be a coward were I to contend with a weaker brother, and rob his children of their bread and raiment. The blame for the bad condition of affairs lies not with the man of limited means and little skill, but it does lie at the door of the man of superior talents, large means, and great opportunities. And it is becoming more and more the fashion to use these superior advantages for utterly selfish ends, and in the mad race for gain we hate the brother who stands in the way. But in the light of the fatherland of God and the brotherhood of man there is no absolute ownership of talents or property, but we hold them in trust, and an account is kept of the trust, and if we abuse it, our misdeeds, like chickens, will come home to roost. We must either heed the obligation or pay the penalty.

The following recommendations are respectfully submitted to your careful consideration:

*First.*—That a rule be adopted that all new legislation shall be assigned, without discussion as to its merits, to appropriate committees.

*Second.*—That a Committee on Constitution and By-laws be appointed, to which will be referred all papers on that subject now in the hands of the Secretary.

*Third.*—The appointment of a Committee on Incorporation. This step is necessary to give us a legal status; to enable us to sue and be sued; to enforce the collection of dues and other obligations; and to hold our officers to a strict accountability. It would also be another factor contributing to the permanency of the association.

*Fourth.*—That the By-laws be so amended, that once a member always a member, with certain limitations. As matters now stand we have really only a floating membership, which goes up or down according to the presence or absence of exciting causes—a very uncertain thing on which to base calculations for making estimates. An effort should be made at least to discover a better plan.

I feel assured that all present have at least the interests and welfare of the association at heart, and that there is a general desire that our proceedings shall be harmonious and highly instructive, and I hope that we shall not be disappointed, but that the outcome shall exceed our most ardent expectations.

## REPORT ON THE PROGRESS OF PHOTOGRAPHY IN GREAT BRITAIN.

By J. TRAILL TAYLOR, *Editor of The British Journal of Photography.*

[Read at the St. Louis Convention of the Photographers' Association of America.]

WERE a period of five years, instead of one year, to intervene between the presentation of reports of progress in photography, then would a more definite advance be recorded, for photography improves by steps that are slow and perceptible in only a limited degree.

A noteworthy feature in British societies and photographic circles, is the prominent part played by the optical, or magic, lantern. There are few photographers now who do not possess a lantern by which to project their pictures in the interests of themselves and friends. This has led to a high degree of refinement being imported into the production of transparencies, each maker of which aims at a high standard. The frequent lantern exhibitions at the London clubs and societies, at which from one to three hundred slides are often projected in succession on the screen, serve as a photographic exhibition, and, by enabling each exhibitor to compare his own work with that of others, act as an incentive for each to eliminate the faults or errors of his own slides, and aim at rivaling his fellows by producing a higher degree of perfection on the next occasion. The influence of this has been greatly ramified and extended. The lantern itself has been improved in regard to increased efficiency in its illumination and optical construction. I have seen, only a few days ago, what at present seems to me to be a lamp destined yet to be widely known. It is an electric incandescent burner operated by a primary battery possessing great powers of endurance and occupying little bulk, being a little larger in this respect than the well-known volume, the U. S. Dispensatory. The light was most brilliant and steady. The battery differs from any of those now in use, and from the fact that the whole affair is being got up by Mr. J. W. Swan, at once an eminent electrician, chemist and photographer, no doubt need be entertained as to its practicability. Its commercial introduction will bring about the golden age of lantern projection, especially on the domestic scale.

The perfecting of the lantern is also causing a small revolution in tourist methods of photography, for with bromized paper for subsequent development, the temptation arises for taking negatives on quarter plates, or at most 4 x 5 plates, from which in any darkened room prints from whole plate upwards are produced by a very brief exposure, and which rival the finest engraving in tone and general affect. I have seen many of these produced, and am convinced that an important future in this direction is before us.

But for this purpose an electric lamp is not necessary, for an oil lamp with circular wick will answer equally well by extending the time of exposure. Another outcome of this lantern mania is the improvement of the lantern lenses, especially the object glasses. These are now being constructed of short focus with an aperture of two inches, the corrections being so perfect as to define the margin of a picture as sharply as the center without any stop or diaphragm.

The public taste is being educated here to appreciate the rich engraving-like black tones of developed bromized paper, tints obtained by ferrous oxalate development and without gold toning. The more general introduction of this system of printing will prove a boon to photographers in the reduction of the time and cost involved in producing such prints.



Photography has achieved a triumph in the world of microscopy within the past four weeks. It had always been contended by skillful microscopists that by no process of photography whatever could a very minute object be enlarged so as to rival its appearance in a first-class microscope by a competent observer. But at the last meeting of the Royal Microscopical Society, when one object, the foot of that minute entity, the parasite of the common bee, was thrown upon the screen from a lantern slide of three and a quarter inches, the most conservative members of that scientific body, to employ sporting parlance, at once threw up the sponge and admitted the photographic triumph. A slide prepared by the Woodbury process was the all-conquering agent in this case.

This suggests the mention of the death, by accident or misadventure, of Mr. Walter B. Woodbury, an event which occurred since the last Convention of the Photographers' Association of America. He was an original experimentalist, a man of vast resources in practical science, and a careful, plodding worker out of ideas. But with faculty of research, the art of carrying out his ideas to such a commercial issue as would adequately remunerate him for his inventions were not equally blended, and so his financial position was far from being on a par with his deserts. By an over-estimated dose of sedative his career was suddenly cut short in the midst of his usefulness, and when a bright future was beginning to dawn. All honor to Woodbury! I knew him well ever since 1864, and bear testimony to his many excellent qualities.

The principle of centrifugal action, as applied to the separation of one body from another of different weight, and as still narrowed down in its application to the gelatino-bromide of silver emulsion, is at present receiving much attention. If a vessel containing emulsion is put in a state of rapid rotation, the particles of bromide of silver fly towards, and adhere to, the walls of the vessel, allowing the gelatine and the water to be poured out as a transparent fluid. I could keep you listening for an hour were I to recount all the uses of this system in emulsion work, but will confine myself to only one. If, through an endeavor to obtain the greatest possible sensitiveness, the gelatine has been decomposed to such an extent as to produce fogging, all that is necessary is to pour the emulsion into the machine, rotate it rapidly from one to four minutes, pour off the now clear solution of gelatine, and mix the separated bromide with a solution of fresh gelatine, and an emulsion is obtained possessing all the good and none of the bad qualities of the former. The separation of substances in this way was first practically applied by an American for the production of butter and cheese from milk by this nearly "instantaneous" process. Herr Plener saw its value for separating emulsion, and applied it, and now Mr. A. L. Henderson has further improved it, and applied it to the requirements of every-day use by the introduction of a machine which is worked by hand. Old and worthless emulsions may now be utilized instead of being relegated to the tank of residues. I know full well the value of your time at the conventions, and hence abstain from saying any more on this important subject.

There is a tendency now in London to favor the use of ready-sensitized silvered paper which yields good tones without the use of gold. While I would be cautious in recommending a departure from trusted methods, from the point of view of permanence, yet it must be admitted that I have in my possession many prints which were made more than thirty years ago, and in which no gold, platinum, or other toning agent was employed, and most of these are still of the



rich purple color they originally were. Where fading has taken place, it is directly traceable to the influence of an improper paste by which they were attached to the mounts, which latter also contained hyposulphite of soda, employed as an antichlor by the paper makers, and which was not perfectly removed. In this connection I may observe that salting the paper with chloride of barium, and sensitizing with ammonio-nitrate of silver, will yield rich tones without a gold bath; and prints thus prepared will, if mounted with freshly made starch on the excellent mounting boards now so easily procurable in the States, give effective pictures possessing a reasonable degree of permanence, if I may judge by some that I have thus prepared and subjected to the action of deleterious gases.

Why are gelatine plates so much more sensitive than collodion? This is a question which is receiving some attention here. But at present it would be premature to give even a summary of the theories that are being advanced.

The subject of the influence of the amateur upon professional photography is one possessing too great an importance to the latter to be lightly passed over. As several in this country who call themselves amateurs, and as such belong to clubs and societies alleged to be purely amateur, while deriving pecuniary advantage, in a greater or less degree, from the sale or manufacture of photographic requisites, the question has arisen, as a side issue: What constitutes a photographic amateur? There are few amateurs who would decline to make money when they can do so from their productions, either directly or through the medium of a professional printer or dealer, and when one does so, the question becomes narrowed down to whether he is then an amateur and not a professional. If such a one produces work of a high class, as many do, it acts as a stimulant to the professional to surpass him in the quality of his work, and thus does good; but if this amateur work is given to the public at a low price—just to defray the cost of the chemicals, you know—then it is seriously detrimental to professional interests. I know many instances in this country where this is the case, and I am greatly mistaken if you in America cannot also cite similar ones. It is much to be regretted, because it directly leads to the cutting down of professional prices, so greatly to be deplored, and against which every true professional ought to strenuously lend his aid in opposition. It is sad, indeed, to anticipate the probability of able men having to retire from the profession in consequence of there not being a respectable living left to them by remaining in it. It is easy to lower prices in hope of competing with others, but terribly difficult to raise them again. The public will reason thus: That when prices for art work are greatly reduced, it is either an indication of work of an inferior class being now produced, or that they have been overcharged in previous times. England and America are both suffering in common in this direction.

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*To the Editors of* ANTHONY'S PHOTOGRAPHIC BULLETIN.

Answer to conundrum in your April issue, also a lift on the "*Sirneys*," as interpreted by

D. J. R.

GRATENE, MICH., December 24, 1886.

DEAR SIR,—I would like to know if you have got the cards of this late American War, such as Battle-fields, Gettysburg, and *also negatives about the other fighting*, about 8 x 12, or as near as you can. Please answer.

## VERY SLOW GELATINO-BROMIDE FOR LANDSCAPE WORK.

By W. K. BURTON, *of England.*

[Read at the St. Louis Convention of the Photographers' Association of America, June, 1886.]

It has always been a matter of surprise to me that no maker of dry plates has thought of issuing a brand of really slow plates. I mean by slow plates, such as have a speed little, if at all, greater than that of collodion.

In landscape work pure and simple, leaving out of the question on the one hand figure subjects, on the other, instantaneous work, what does it matter to us whether our exposure be two seconds, or twenty, or even sixty? It matters not at all, and there are great, I may say enormous, advantages in the very slow plates. There is in the first place a quality to be got which cannot be had with rapid plates—certainly quite as good quality of negatives as could ever be got with collodion. I don't mean here to infer that we cannot get all round as good prints from rapid dry plates as we can from wet plates, but I am quite certain that we cannot get negatives which will give the prints as rapidly and as easily. Now, with a very slow plate we can get negatives which will give the very highest class prints, and which may be printed from in as short a time as from a wet plate.

Then the ease in manipulating slow plates is so great an advantage—not because of the ease and comfort itself, but because this ease and comfort leads to a higher average quality and to a smaller percentage of failures. I need scarcely point out that, other things being equal, our success in development, etc., will increase with the amount of light that we may safely work in. I do not now talk of ease in the preparation of the plates; that I shall consider afterwards. But besides the greater percentage of successful negatives, due to increase of light allowable, we have an increased probability of success, from the fact that with a slow plate there is very much more—even proportionately—latitude of exposure than with a rapid plate.

A very great point of superiority in a very slow plate over a rapid one, is that in the case of the former the film (if the emulsion has been properly made) is ruby red, so that, as a consequence, such a thing as halation is out of the question. This is a matter of the greatest importance. Few appreciate how much the general character of our landscape work is degraded by the existence of halation; but let any one take three or four landscape plates, back one-half of each with bitumen solution and expose them on various landscape subjects, including trees, he will be convinced that the amount of degradation is very great.

It is true that many makers of plates send out goods of two different degrees of sensitiveness; but, at any rate, in the case of those over here, the slower of these two is always, in my opinion, of such a speed as not to give the advantages of a very rapid plate, whilst it fails to give the quality of a very slow plate.

Possibly it is otherwise in America; or, if it is not, possibly some enterprising plate maker may take the hint I offer, and make a plate of the nature that I describe. Meantime, I feel sure that any amateur who will take the trouble to make such plates as I describe for himself, will find his labors very well repaid. I am by no means fond of advising amateurs to take up the work of plate-making; I know too well what the troubles involved in making rapid plates are, and, of course, it is always a rapid plate that the amateur aspires to manufacture.

I am not fond of starting amateurs to make rapid plates, but I should have



no hesitation in starting them to make very slow plates, if I thought they would confine themselves to that work. The thing is comparatively so very simple. In the first place, barring extreme carelessness, failure is scarcely possible. There is no need to fear the various fogs—chemical, green, red, etc.—which are liable to make their appearance when we are striving after rapidity; and there is not the frequent disappointment in finding that, after all, our emulsion is not so sensitive as it should be.

Lastly, the drying of the plates is not, by a very long way, the serious process that it is with very rapid emulsion. A very rapid emulsion is always comparatively transparent, and it is necessary to put a large quantity of it on to the plates to get a film dense enough, and it is quite a problem, especially in varying weather, to dry it. If dried too quickly, one kind of evil makes its appearance, and if it takes too long in drying we have another, and perhaps worse, form of evil; but when we are using very slow emulsions, the affair is quite different. A slow emulsion is opaque, even when spread in a comparatively thin film, so that far less of it than of a rapid emulsion needs to be spread on the plate. Then the slow emulsion is much less delicate, and therefore less likely to be damaged by too great heat and remaining too long in a damp state. It is not generally understood that, as a film increases in sensitiveness to light, it also increases in sensitiveness to all sorts of actions having a deleterious tendency. The coating of plates with a slow emulsion is a comparatively very easy process. If the dark room be tolerably large, and be well ventilated, a dozen large plates, or several dozen small ones, may be dried by simply leaving them in racks over night; that is, if the weather be warm and dry; if it is not, a little heat must be applied by hot water-pipes, or a gas stove arranged not to let any light or any products of combustion escape into the dark room. Of course I am supposing that the amateur does not care to go in for a regular drying-box; if he does, the problem is considerably simplified.

I will give a formula, although I claim no particular merit for it, except that I have tried to so adjust the details that the process may be as simple as possible, and that the chance of failure may be reduced to the minimum.

A.	
Nitrate of silver.....	200 grains.
Distilled water.....	3 ounces.
B.	
Bromide of potassium.....	160 grains.
Iodide of potassium.....	10 “
Soft gelatine *.....	40 “
Muriatic acid.....	2½ minims.
Water.....	3 ounces.
C.	
Hard gelatine.....	150 grains.
D.	
Hard gelatine.....	150 grains.

The gelatine of B is allowed to soften. At the same time water may be poured over the lots of gelatine C and D (kept separate one from the other) to let them swell.

A and B are now heated to 120 degrees F., and A is poured into B slowly,

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\* In England we use Nelson's No. 1 gelatine.



with vigorous stirring. The emulsion thus formed is allowed to stand for ten minutes with occasional stirring. Meantime as much of the water is squeezed out of the gelatine C as is possible, by wrapping it in a towel or similar piece of cloth and wringing the cloth round.

After ten minutes, the emulsion (having been allowed to remain without stirring for at least two minutes to allow any granular bromide which may have been formed to subside) is poured over C, heat being, if necessary, applied to melt the gelatine. When the gelatine and the emulsion are thoroughly incorporated, the jar containing them is set to one side to allow the whole to set into a stiff jelly. In cold weather there is no difficulty in getting the emulsion to set, but if the weather be warm it should be allowed to stand in a vessel containing water with a lump or two of ice in it. Once thoroughly set the emulsion is washed in any of the well-known ways, being either squeezed through canvas, or otherwise cut into small fragments. When it has been washed thoroughly, and drained till no more water will run from it, D (having had as much water as possible wrung out of it) is added. The whole is melted up and one-half ounce of pure alcohol is added, when it is ready to be used for coating plates.

The reason for adding the hard gelatine in two lots may not be evident at first, but there is a very good reason. If the whole of the gelatine were added before washing, the result would be that a great deal of unnecessary water would be taken up during the washing process and could not be got rid of otherwise than by precipitation with alcohol.

It would not, it is true, be necessary to get rid of this water if the plates were to be coated in very cold weather, or if they were to pass under an ice tunnel, as is sometimes the practice; but if an emulsion takes up all the water it will, when being washed in very small pieces, and no further gelatine be added, the film will take a long time to set, except in the cold weather, and there is nothing that damages the quality of a film more than to remain in a liquid state long on the surface of the glass plate.

The emulsion made up as I have described will tend to set very quickly. It will probably not be more than about ten ounces in quantity, and will set far too quickly in cold weather, but this is a difficulty that is very readily got over. When I say that it will set too quickly, I mean that it will begin to set before it has had time to spread evenly on the glass. If this be the case it is only necessary to add a few more ounces of water. Barring such rapid setting that the emulsion cannot be spread evenly, the quicker the setting the better.

I do not know what kind of gelatine you have at your command in America, but with the best kinds of emulsion gelatine (German or Swiss) that we can get here, an emulsion made up as I have just described, and not diluted with water, would set in a few minutes in a temperature of about 80 degrees F., and I think it is useless to attempt to make emulsions, or at least to coat plates, when the temperature is higher than this.

The quantity of emulsion that I have described should serve to coat a dozen 10 x 8 plates. A skilled coater could make it cover a dozen 12 x 10 plates without any part being too thin.

Those who will take the trouble to make for themselves a few plates according to the instructions that I have just given, will, I am sure, not think that their time has been thrown away.

They will find themselves possessed of plates, very slow, it is true, as plates

go in these days, but having all the qualities which are considered the most desirable for landscape work. Easy to manipulate; allowing of very great latitude of exposure; capable of giving any density required, with a perfect gradation of density and absolutely clear shadows; showing no halation; and, lastly, capable, should an error of judgment have been made during development, of being intensified with silver almost as readily as a wet plate.

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### TAKING BABY'S PICTURE.

Photographer :—

“Cards? Four dollars. Six for this size.  
 These will please you best, I think.  
 I'll be ready in a moment,  
 And we'll take him, in a wink.  
 Bring in baby. Will you hold him  
 Sitting in your lap, and—No?  
 Ah! I see!—Then we'll arrange him  
 In this little high chair.—So!  
 There, that's easy—‘Heigho, baby,’  
 Going to take a little ride?  
 Want to see the pretty birdy?  
 (When I'm ready step one side.)”

Mamma :—

“Now, my Bessie, do not whisper;  
 We must still as statues be.  
 If we speak the baby'll surely  
 Turn his head and look at me.

Photographer :—

“Now, good Nurse, please raise him up  
 (A little—there!)—‘Hear birdy sing?’  
 (A little more!)—‘Where is the birdy?’  
 (That's right)—‘What shall Nursey bring?’  
 (Try to close his mouth.)—‘Come birdy!’  
 (Now his head is up too high—  
 Easy—there!) ‘Chirp, chirp—hear birdy?’  
 Baby see birdy by an' by!  
 (That's right—keep him so!)—‘Good baby,’—  
 (Steady!)—‘Baby wouldn't cry!’  
 (Now then!)—‘Look! see! here's birdy!’  
 —Caught him first time, ‘on the fly!’

“Yes, it's good. I know you'll like it.  
 I'll have proofs without delay,  
 Can't be better. Finished?—Friday.  
 Very much obliged. Good day!”

# ANTHONY'S Photographic Bulletin.

EDITED BY

Prof. C. F. CHANDLER, Ph.D., LL.D.,  
Aided by ARTHUR H. ELLIOTT, Ph.D., F.C.S.,  
and a corps of practical assistants.

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*E. & H. T. ANTHONY & CO., Publishers.*

## THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.

A STATED meeting of the society was held Wednesday evening, June 2, 1886, with the *President*, Mr. FREDERIC GRAFF, in the chair.

It was announced that the judges of the late exhibition had selected from the work of members shown at that time the two presentation pictures for the current year. One was by Mr. Robert S. Redfield, entitled "By Quiet Waters," and the other by Mr. Frank G. Cauffmann, called "May Days."

A question in the box asked: "What is the exact meaning of flatness of field (applied to lenses)?"

Flatness of field was described as the quality in a lens of sharply defining the extreme edges and the center of a plate when using a large stop and focusing on objects all in one plane, that plane being at right angles to the axis of the lens; as, for instance, a piece of printed matter or a picture on a flat surface as arranged for copying.

Mr. Wood, referring to a matter under discussion at the last meeting, asked whether it would not answer as well to put a plate in the alum bath after, instead of before fixing; his idea of the object of the alum being to toughen

the film and prepare it for long washing. It was answered that this would do as well if the alum was only needed for its clearing action of the plate, but if the film had a tendency to soften or frill, the alum was needed before fixing to counteract this tendency, which generally showed itself in the fixing bath.

Mr. Eckfeldt asked the cause of mottled markings on a plate, having the appearance of snakes. The markings showed themselves on the plate in question after fixing, another plate of the same lot, developed and fixed in the same solution, being free from them. It was thought they were occasioned by the plate remaining quiet in the bath during fixation, it being generally advisable to rock the dish occasionally so as to allow fresh portions of the bath to have access to the surface of the plate.

Mr. Edge showed a plate which was disfigured in a number of places with markings like short curved hairs, each about one-quarter of an inch long. The markings seemed to be in the gelatine film itself and not on the surface, and a member suggested their connection with the use of chrome alum in the emulsion.

Mr. Frederick E. Ives showed four negatives of the lime-light spectrum, made on plain and color-sensitive collodion emulsion plates. He stated that the spectrum was projected by means of an optical lantern and flint-glass prism, with a slit measuring one-fiftieth of an inch, and all plates received the same exposure and development.

The first negative was on a plain emulsion plate, which was practically insensitive to green, yellow, orange and red.

The second was on a chlorophyl plate, which was remarkably sensitive to all parts of the visible spectrum, and was more sensitive to red, orange and blue-green than to violet.

The third negative, on an eosine plate, showed no sensitiveness to red and orange, but was more sensitive to yellow-green than to blue or violet.

The fourth plate, prepared with both chlorophyl and eosine, appeared to show the full action of both sensitizers, and there was no part of the lower half of the visible spectrum to which this plate was not more sensitive than to the violet.

There appeared a slight reduction of violet sensitiveness in the chlorophyl plate, and a corresponding increase of blue sensitiveness. The eosine and the chlorophyl-eosine ap-



peared to be exactly as sensitive to violet as unstained plates.

Replying to questions asked, Mr. Ives stated that wet collodion emulsion plates were a great many times less sensitive than the rapid gelatine dry plates, and even required three to ten times more exposure than ordinary collodion bath plates, but could be made so sensitive to red and yellow that they required less exposure through a color-screen than the most rapid ordinary gelatine dry plates.

He had tried Carbutt's color-sensitive gelatine dry plates, and thought they were very good indeed, but not yet sufficiently sensitive to red to be satisfactory for some subjects.

The collodion emulsion chlorophyl plates, as prepared by Mr. Ives, would always bring out detail in all the colors, even when no color-screen was used; but in daylight it was necessary to use a color-screen to secure correct color-tone. Color-sensitive gelatine dry plates appeared to show no practical advantage over the ordinary plates for use without the color-screen.

A perfect color-screen could be used either between the sensitive plate and lens, inside the lens mount, or in front of the lens; but if the glass of the color-screen was not of perfect uniform density and thickness, it would be necessary to place it near the sensitive plate. His lenses for outdoor work had color-screens fitted in between the diaphragm and back lens, where they occupied the least possible space.

He believed color-sensitive plates would be extensively used. He had made some photographs of difficult oil paintings and similar subjects, which could be made good only on plates remarkably sensitive to red; but there were many subjects that would come almost, if not quite, as good on the orange and yellow sensitive gelatine dry plates now in the market.

Some further discussion of the subject followed, in all of which those present evinced great appreciation of the interesting manner in which this valuable improvement had been illustrated by Mr. Ives.

Adjourned.

ROBERT S. REDFIELD,  
*Secretary.*

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*All communications for the columns of the BULLETIN should reach us on Monday preceding the day of issue, to insure their publication at that time.*

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A MAN is never so much put out as when he is taken in.

## THE PHOTOGRAPHERS' ASSOCIATION OF AMERICA.

*First Day.*

ST. LOUIS, June 22, 1886.

THE President—The Convention will please come to order.

The first business on the programme is the address of welcome by Mr. G. Cramer, of St. Louis.

MR. G. CRAMER—*Mr. President and Ladies and Gentlemen:* The grand day which we have been anxiously awaiting and preparing for since our last meeting at Buffalo has now come—the opening day of the Seventh Annual Convention of the Photographers' Association of America, for which our City of St. Louis has been chosen. It affords me great pleasure to see such a large attendance of the members of our association, from all parts of the United States and Canada, who have left their homes and dear ones and have traveled many miles, all for one purpose—to participate in our annual gathering, and to advance the progress and interests of photography. It affords me great pleasure to again see the many faces of those who regularly attend our conventions, and also to see so many new members increasing our ranks. The intimate intercourse and friendship between the photographers of the whole country is not the least of the glorious achievements of our association, and I hope that many new bonds of friendship will be tied during this meeting.

The advancement of our art and the present high standard of photography, are due to a great extent to these annual exhibitions of our work, which have become a school of art for all members of our profession; and, supported by an able press—by the several photographic journals who are enlightening and teaching the craft—our country ranks foremost on the road of progress, which we notice all along the line. We also note that those who have made it their object to attend our meetings, and who consider it an honor to belong to this grand association, have made rapid progress in our art, because they are always ready to learn; while those who think themselves too good and too far above their fellow-craftsmen, will gradually lose ground and be compelled to take a back seat. The grand exhibition of our work which adorns the walls of this building, and which excels any previous exhibition of this kind ever held in this country—and to which even Europe has sent its finest work—is the greatest testimonial to the value of our association; and it is a great satisfaction to all

of us to see that our association has assumed such magnificent proportions; and we take the assurance with us that there is life in it, and that it will prosper and grow on the fertile soil of this grand country.

I hope that the St. Louis Convention will mark a milestone of progress in our association. It is now my pleasant duty to welcome you most heartily in the name of the photographers of St. Louis and to tender you the hospitality of this city, in which I have had the pleasure of living half of my lifetime. I hope you will carry away with you pleasant memories of our city. During the few days of your stay with us, most of your time will be occupied in seeing and hearing, learning and teaching; but I hope that the present meeting will combine the pleasant with the useful, and that you will enjoy temporary relief from the cares of your business.

Our local society of photographers of this city join in giving you a cordial greeting, and it affords me great pleasure to tender you in their name a hearty welcome to our city and our galleries.

May you be happy with us, and may peace and harmony prevail during this Convention.

To this the *President*, Mr. POTTER, of Indianapolis, replied.

Mr. Cramer: I feel that no words of mine can possibly add to the reputation of St. Louis for large-hearted hospitality. It is well known that the generous impulses of your citizens are not mere superficial eddies, but that they are as broad and deep as the mighty river which flows by your borders. Consequently we feel assured that your welcome wells up from the heart. On the other hand, while the members of our association will gratefully accept the courtesies shown them, they will in no wise abuse the privileges extended. Therefore it is an exceeding great pleasure to me, on behalf of the officers and members of this association, to accept your hearty welcome, and return our sincere thanks to you and all whom you represent.

On motion of Mr. J. A. W. Pitman, of Springfield, Ill., the reading of the minutes of the last session was dispensed with.

The report on the Progress of Photography in America was then read by Dr. Elliott. [See page 353 last BULLETIN.]

The *Secretary*—Mr. President: I take great pleasure in moving a vote of thanks to Dr. Elliott for his very able paper.

This motion was seconded by Mr. Landy, and agreed to.

The report on the Progress of Photography in Great Britain, by Mr. J. Traill Taylor, was then read. [See page 398.]

Mr. LANDY—I move that a vote of thanks be tendered to Mr. Taylor for his very excellent paper.

Agreed to.

The *President*—The next business in order is the appointing of a Committee on Location and the Nomination of Officers.

I appoint on that committee Messrs. J. K. Motes, Atlanta, Ga.; S. W. Felt, Chicago, Ill.; Edward Cope, Philadelphia, Pa.; and D. A. Clifford, St. Johnsbury, Vt.

Under the head of miscellaneous business I would announce the Committee on Awards.

The committee on awarding the Association Medals for the best competitive exhibits is as follows: Mr. F. W. Guerin, St. Louis; Mr. James Mullen, of Kentucky; Mr. J. D. Cadwallader, of Ohio.

It is ordered by the Executive Committee that all displays of photographs, of whatever description, shall remain in place in the art department until Saturday morning.

The Local Secretary will see to the enforcement of this order.

The next business in order is the Treasurer's report. I suppose that you have all read this report, as it has been published. At the meeting of the Executive Committee in January, Mr. Clark and myself audited the Treasurer's report, and found it correct to a cent. But if you want it read it will only take a few moments.

The *Secretary* then read the report.

[This report has already been published in the BULLETIN.\*]

On motion the report was accepted and placed on file.

The *President*—The next business in order will be the reading of the Secretary's report.

A motion was made that the reading of the Secretary's report be dispensed with.

This motion was seconded by several members.

Mr. G. CRAMER—I am sorry to see that there is so little attention paid to the reports of the Treasurer and Secretary, as they are actually in order, and we should have them read. It is the first time that such reports have been presented. We have never had until now reports from these officers. I think

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\* We would call the attention of our readers to the fact that this report as published in the BULLETIN was the only one that was found to be printed correctly.—EDS. OF BULLETIN.



that we ought to be glad that we have officers who are ready to report, and we should listen to their report when it is presented.

The motion being on the question to dispense with the reading of the Secretary's report, it was not agreed to.

The Secretary then read his report.

The *President*—I would state that the Auditing Committee examined Mr. McMichael's report at the same time they examined Mr. Carlisle's report, and while they think and feel perfectly assured that Mr. McMichael's account is perfectly square and upright, it did not balance, and therefore the Committee could not sign their names to the report. Mr. McMichael stated to the Committee that he would take his report home and look over it, and I suppose that then it will be signed when it is brought up.

Mr. McMICHAEL—The reason I did not balance the account when I brought it to the meeting of the Executive Committee, was because the constitution distinctly says the accounts shall be audited at each regular meeting of the association.

Mr. PITMAN—I move that an Auditing Committee be appointed to audit the accounts of the Secretary.

Mr. McMICHAEL—I move to amend; that the President appoint an Auditing Committee to report at this meeting.

The *President*—That is perfectly in order, being only an amendment to an amendment of the original motion.

Mr. McMichael's motion was then agreed to.

The *President*—I will appoint on that committee: Messrs. E. Long, of Quincy, Ill.; D. R. Clarke, Indianapolis, Ind.; and D. A. Clifford, of St. Johnsbury, Vt.

We have some miscellaneous business. I will read the following letter :

BARRIE, CANADA, June 19, 1886.

W. H. POTTER, Esq.,

*President of the Photographers' Association of America.*

DEAR SIR, AND BROTHER PHOTOGRAPHERS NOW ASSEMBLED IN CONVENTION,—I wish you every success. Sorry I am not able to be with you this time. Please accept my best wishes for the prosperity of the Photographers' Association of America.

Yours truly, etc.,

JNO. STEVENS.

A member from the start of the P. A. of A.

Also the following:

MERCHANTS' EXCHANGE OF ST. LOUIS.

ST. LOUIS, June 21, 1886.

Mr. W. H. POTTER,

*President, Photographers' Association of America.*

DEAR SIR,—The undersigned take pleasure in extending to yourself, and the officers and members of the Photographers' Association of America, a cordial invitation to visit the rooms of the Merchants' Exchange during your stay in our city. Yours very respectfully,

S. W. COBB,

*President.*

GEO. H. MORGAN,

*Secretary.*

On motion of Mr. Joshua Smith, the invitation was accepted with thanks.

The *President*—The next in order is new business; after that the paper by Mr. W. M. Ashman, on "Gelatin a Substitute for Albumen in Silver Printing" [see next BULLETIN]; also a discussion on printing and toning.

The paper by Mr. Ashman was then read, and on motion was accepted with thanks.

The President then read his address. [See page 395.]

On motion, a vote of thanks was tendered to the President for his address.

On motion, three cheers were given to Mr. Cramer, of St. Louis.

On motion, the association adjourned, to meet Wednesday morning at 9 A. M.

*Second Day.*

ST. LOUIS, June 23, 1886.

The President called the Convention to order at 10 A. M.

The *President*—I will make a few announcements. The art department will be opened all day Friday, from 10 A. M. to 10 P. M., to the public. This will be advertised in the columns of the daily papers, and the reporters will please put in the heading, as we want the public to understand all about it.

There has been some mistake about the excursion. I believe it was stated in some of the papers that it would take place this afternoon. It is to be on Thursday afternoon, as the programme stated. I know nothing about it, further than what I see on the programme. I think that the good people of St. Louis are going to surprise us. They have not given the officers any notion as to what is going to take place. There is to be music, and if they keep us from dancing, they will have something to do, I suppose. Through courtesy I will read this announcement :



For the convenience of members of the Photographic Convention we have opened a branch office in the hallway leading to the Exhibit Hall of Exposition Building. We will have an efficient operator at this office each day from the opening to the close of the convention. If you will kindly announce this fact to the members of the convention at its first meeting, you will greatly oblige us, and I hope you will find it the convenience we wish to make it. Yours truly,

E. H. BROWN,

Western Union Telegraph Company.

I did not receive this until after the meeting yesterday. The office is down at the entrance of the hall.

I now read a letter from Mr. J. Traill Taylor.

2 YORK STREET, COVENT GARDEN,  
LONDON, June, 1886.

MY DEAR MR. POTTER:

The slip of my report which I sent three days ago was quite imperfect. Kindly accept the inclosed one instead.

If you appoint me to do any work for the convention for the next year, I will do it with all the ability and willingness I possess, although not a member.

Will you kindly arrange to get the official reporter to mail report to me daily, as I will publish it fully in our journal.

In heart I shall be present with you at the convention, and I sincerely hope you will have a full measure of success.

Very faithfully yours,

J. TRAILL TAYLOR.

*The President*—The first thing in the regular order are the reports of the committees. I will now call on the Committee on Nomination and Location. Is that committee ready to report.

Mr. President: Your Committee, to whom you referred the duty of nominating officers for the ensuing year, would respectfully nominate the following: For President, H. McMichael, of Buffalo; for Secretary, F. W. Guerin, of St. Louis; for Treasurer, G. M. Carlisle, of Providence; Executive Committee, James Landy and W. H. Potter. Location for next convention, Chicago, Ill.

In regard to the Vice-Presidents we would say that we had no recent roll of members, and that we would like a little further time on that; or, let the Convention nominate, as the members of the Committee are not sufficiently acquainted to make a good selection. Therefore if you desire that the Committee should

make the nomination, we ask for time on that. Respectfully submitted.

C. W. MOTES.

EDWARD COPE.

D. L. CLIFFORD.

L. M. FELT.

*The President*—What shall be done with the report? We can either accept the report as far as made or refer it back.

A motion was then made that the report be accepted and that the committee be granted further time.

Agreed to.

*The President*—The next in order is unfinished business, the discussion on "Printing and Toning." Is any one prepared to open the discussion on printing and toning? I see Mr. Ryder present, and I will call upon him to start the discussion.

Mr. RYDER—Mr. Clemmons is the old standard on that subject.

*The President*—I think he is not here yet, and we would be glad to hear from Mr. Ryder.

Mr. RYDER—I should be very happy to say something on this subject of printing and toning, but I am not a practical worker, not having done any of that work in my life. Years ago I used to make sittings, but I am getting to be an old man, and all I do now is to look after the boys. Whilst you have my assurance that I would be glad to talk to you on this subject, I consider myself incompetent, and ask to be excused.

Mr. Motes, of Georgia, and Mr. Long were then called for, but they did not respond.

Mr. BELLSMITH—How about printing without toning.

*The President*—They have got that over in England. We will get it after a while. Now, gentlemen, there is an opportunity for the young men. The young man is generally the printer. I give you five minutes.

Mr. RYDER—Our President has published a little treatise or essay on printing. He did it very nicely, and I do not see what better we could have at this time than to have him start the ball on the printing question.

*The President*—The difficulty is that in my little pamphlet I embodied all I know on the subject, and it is in a great deal better shape than I could present it before you extemporaneously. What I want is to start the discussion going on some point. We can start the blister question. One man has his opinion, and another man has his. If we can start it once it will be all right.

Mr. WARRENTON—Let the members ask you questions. I will ask you the first one. Why is it that many photographers, I among others, fume about four or five times as long as we used to do?

The *President*—I can answer that question. Our large prints are printed on paper—I am now giving my own experience—which is different from the paper used on small cabinets. Now, that paper we silver the same length of time (except the negative be very dense), on the ordinary run of negatives, that we did the other paper (the Phoenix I mean), but when we come to fume it we fume this paper ten minutes. I give orders not to fume more than ten minutes, but the Phoenix paper we leave in an hour. The way to account for it is this. This large paper is not calendered; it is not as smooth or as firm; it is more spongy, and the fumes take hold of it and perform their duty, while the other is calendered very finely; that is the only way in which I can account for it. The double-gloss paper is calendered more highly than the other paper. Ten minutes' fuming with the one paper will print blue; while half an hour's fuming, in the same box, with the same amount of fuming, and the same silver bath, the other paper would print red.

Mr. PITMAN—What paper have you reference to?

The *President*—I don't know what its name is. You can only get one kind.

Mr. PITMAN—Is it the double albumenized?

The *President*—It is so large that they cannot calender it. Some is a great deal better than others. Some is so spongy that the picture looks flat and ugly on it.

Mr. BROWN—I do not understand what question is being discussed.

The *President*—The question being discussed is why we fume so long. That is, in comparison to the length of time we used to fume. Ten minutes used to be considered full fuming. My experience is that we leave our paper in the fuming bath or fuming box generally until noon. It is pretty strong I know when I pass along there, and I get a good deal of it. Then again we roll the paper up. We have a roll, and roll it on, and it takes all of the kinks out. I find the better the paper stands the hot weather the more fuming it requires. If the paper fumes very quickly it will discolor very quickly. The only way in which I can account for it is that all chemical actions take place very rapidly, and of course some paper fumes more quickly

than others. For this reason it requires more fuming.

Mr. LONG—I would like to ask if any one present can give a preventative to curing paper silvered with ammonio-nitrate from turning dark in this hot weather. I have been troubled with it in solar printing. I cannot do more than half a day's work before I must go to toning to save it.

The *President*—Can anybody answer that question? I am afraid, Mr. Long, there are very few who have had experience in that line. I have had none. Another thing I am surprised at, and that is that the subject of blisters don't come up, as they usually do. That is one thing which I have treated of in my publication, and while I do not want to be forward in this matter—I know I do not get out the best prints in the world, but we are not troubled with blisters. I have used all the papers in the market, and I may say I have used a great many brands of paper, but as a general thing I am not troubled with blisters at all. The only way I can account for it is this: I only use a bath forty grains strong; silver three minutes; take out the paper after silvering; and I think that the paper, with a forty-grain bath, three minutes' silvering, is silvered long enough. Now, my theory about blisters is this: If we use a strong bath, the moment you lay the paper on the bath it is like putting meat on a hot griddle, it burns it on the outside and leaves it raw underneath. A strong bath coagulates the paper so quickly the silver cannot penetrate, and your albumen next to the paper is unchanged, uncoagulated; and when you put it into the water the albumen dissolves to a certain extent. The surface being so coagulated, allowing no chance for the air to escape, it puffs up into blisters, showing that your paper is not properly silvered, the albumen is not properly coagulated. I think if that plan is pursued, blisters cannot come. We use our toning bath, winter and summer, of a certain temperature.

Mr. S. W. FELT—I would like to know the cause of the printing bath yellowing? I have had that happen in my experience.

The *President*—Is it a bright yellow or a muddy yellow?

Mr. FELT—It is a bright yellow.

The *President*—It is something taken up from the albumen. I think it will do no harm as long as the bath is clear. My bath has a little green tinge, otherwise there is no difference. The paper which I use is pearl, and I think the coloring matter put in affects the



bath and gives it that color. I think that it cannot hurt the bath. A muddy bath turns brown and there is albumen in it. We use soda; keep an excess of the carbonate of soda in the bottom of the bottle to make absolutely sure that the bath is neutral.

Are there any further remarks on this subject? If not, we will take up miscellaneous business. If there is no miscellaneous business, we will take up new business.

There is a convention to be held in August in Brunswick, Germany. We have promised our German friends across the ocean that in return for past favors, and what they have done for us at this convention, we would send them a representative exhibit from this convention. Therefore I would suggest that a committee of judges be instructed to select from the exhibits winning prizes, and other good exhibits not competing, enough pictures to constitute such a representative exhibit.

I say that to you without giving any details of this matter. I thought it hardly necessary to take up the time of the convention; however, I thought I could attend to it just as well now as at any other time. The suggestion is, that these judges select three or four from each exhibit winning a medal and ship them from St. Louis abroad, and also select from the exhibits not competing, enough pictures to make a representative exhibit of the pictures at this convention. Now then, a committee should be appointed to take charge of this matter, a committee of judges merely selecting them, and a committee can be appointed to take charge of them afterwards in New York, send them abroad, and attend to paying the duties. They can be taken and packed without framing by packing them in tin-foil, which can be done at a very moderate price. They should be sent to this German convention, which meets in August, and after they are through with them in Germany they can go to England or other parts of Europe—to any country which requests them. Let them go the grand round, and then send them back to Germany where they want them as a permanent exhibit. They could go back there and remain there. It would not be necessary to have them returned to this country. If we inaugurate something of this kind, whenever they hold conventions there, they would feel under obligations to return the compliment, and in the course of time we should get up a transference of pictures that would be a great benefit to all. We all realize the importance of the German exhibit. Especially was it the case last year. And I can say, right in this

connection, that many have been thoroughly convinced by the German exhibit last year of the beauty of some of the styles of lighting and posing, and so on, and we have been wonderfully benefited by it. I am in hopes at least that they will receive some benefit from what we send them. I hope that we can make some return for what they have done for us.

If there is no further action to be taken on this subject, and if there is no objection to it—for, of course, if there is any objection I want to know it, and I want to convince any member who has got any other idea—if this is done by general consent I will instruct the judges to make the selection. I think under the circumstances that there is no exhibitor who would object. Of course, an exhibitor ought to be proud if such a selection was made for the purpose of sending his pictures abroad. The pictures could be sent to some person in New York who can attend to the Custom House matters. There is no doubt but that the parties will consent.

Mr. BELLSMITH—I here make a motion that the President appoint a committee, or give such instructions to the committee of judges, to select such a number of pictures from the exhibits as they deem necessary and proper to be sent to Germany.

Agreed to.

Mr. GENTILÉ—A great many gentlemen object to the use of this hall. There is a small hall in which everybody could be heard perfectly. The members object to coming up here because they do not hear.

The *President*—Of course this meeting will have to proceed without any change of hall, and when we adjourn the matter can be arranged for a change of hall.

The Secretary then read a paper by Mr. W. K. Burton, of England, subject: "Very Slow Gelatino-Bromide for Landscape Work." [See page 401.]

On motion of Mr. Ryder, of Cleveland, a vote of thanks was tendered to Mr. W. K. Burton for his very able paper.

Mr. W. H. H. CLARK, of St. Louis, at this point read the following remarks in presenting the banner.

*Mr. President, Ladies and Gentlemen of the Photographers' Association of America.*

It is my privilege to-day to appear before you as the representative of an old friend of yours, and in my humble way perform a pleasant duty, which I would rather had fallen into more competent hands.



Mr. President: In the days of chivalry, the aspirant for glory on the field of carnage was presented with a shield and a banner, without a motto, and was required to earn one with his sword. To-day I have the honor to present you, sir, as the representative of an influential, large, and rapidly increasing brotherhood, with a banner upon whose silken folds is already inscribed, by the finger of the great orb of day, something nobler than any motto ever earned by man by the slaughter of his fellows.

The glory of the knights of old was won at the cost of the life of the vanquished, and the tears of the mothers, wives and loved ones of those who fell beneath his sword. This banner represents something higher and holier than blood and wailing.

It represents an art-science which is, without doubt, the greatest boon ever given to man. One which—instead of the sorrow and anguish inflicted by the sword—gives to the weeping wife and mother the portrait of the loved and absent, and recalls in all their manly beauty the features of him who, though far away in person, is ever present in thoughts of the dear ones at home.

This banner bears on its face a record of the association over which you have the honor to preside. It is unique and original in conception. Upon its folds appear not only the names of the past and present officers of the association, but their features as delineated by the unerring finger of old Sol himself, the first and grandest painter this earth has ever beheld; and while it waves over you, may it ever be the emblem of peace and good-will amongst those whose art-science it represents. \* \* \* \*

Mr. President: To you, as representative of the P. A. of A., and on behalf of Mrs. Fitzgibbon-Clark and the *St. Louis Photographer*, I present this banner. When your term of office expires, and your successor assumes the position you now occupy, turn it over to him. He can appoint some one to take charge of it for the association, or do so himself. Should the P. A. of A. cease, or the banner be no longer desired, it is then to revert to the donor. Accept it, sir, and with it the best wishes for the welfare and success of the association you represent, by one whose heart is overflowing with good-will toward the whole photographic fraternity, and especially to the Photographers' Association of America.

Mr. Clark then read a presentation poem, of which the following are the first and last verses.

Mediaeval times in verse are sung,  
When men to battle gaily rode;  
Each to the breeze his banner flung,  
Its colors on its standard browed.

\* \* \* \*

Then bannered host lead on, lead on—  
Be in the van of forward march;  
Your science now is in its dawn,  
'Twill be the keystone of art's arch.

The *President*—I have the honor, on behalf of the officers of this association, with the deepest feeling of emotion, to accept this banner.

Woman—lovely woman—we bow to thee. Your presence pervades our association. We welcome you as our better halves. When we go to battle, how many loving hands have worked on what we have taken with us. How many men have given up their lives for the love they bore to women. The flag of the country is carried by brave men in defense of lovely woman. They give up their lives in their defense. How our hearts throb, and how brave we become on such an occasion. Those who have gone from home to battle for their country, and those who have had fathers, brothers and children, die for the flag. What will we not do for the flag? And now we have a banner, the banner of our association. Around that we can rally, and we should rally, and that banner will unite us and keep us together, and make a purpose in our heart that this association shall live as long as photography lives. (Applause.)

There is the banner, and here are we living men, but how soon the time will come that we will drop out and be laid to rest. There is the banner, which from this time forward will be the banner of this association, and when we are gone there will be a representative. There will be something to unite the members of this association; to keep the men together; to enable them to keep step together; to go forward in the future in the same direction that we are going ourselves. I know that we all feel that Mrs. Fitzgibbon-Clark has passed through the greatest affliction of life, and with affection we look on her as a lady of our association. She is a representative lady, and we are glad to know that there are so many ladies taking an interest in the association, and we cannot look on that flag now, nor in the future, without remembering the kind assistance and generous impulses given us by these ladies being present, and by their encouragement. I think that in the future there will probably be a greater influence exerted over this convention

by the ladies. While I kindly accept this offering, I hope it will be the flag that will exist forever and so also the association. (Applause.)

Mr. BELLSMITH—The Committee on Investigation appointed at Buffalo are ready to report.

The *President*—The report will now be taken up and read.

[The following extracts from this report are all that we think will interest our readers.—EDS. OF BULLETIN.]

\* \* \* Regarding the alleged overcharging on tickets, your committee are unable to obtain any evidence to substantiate such charges.

Owing to the lack of keeping proper accounts, this committee has found no means of ascertaining the correctness of said charges, and that Mr. Weingartner states upon his honor that all moneys received by him, except as stated in this report, were turned over by him to the Treasurer.

Mr. Armstrong, in a communication to this committee, ignores your committee, and refuses to be investigated or hold any communication on the subject. \* \* \*

In view of the unsatisfactory state of the present constitution, your committee respectfully recommend a revision of the same, and the insertion of a clause regulating the payment of the expenses and the emolument of the officers of this association. They would also recommend that the word "Treasurer" be submitted for the word "Secretary" in Article 2, Section 2, of the Constitution; and that all moneys be paid to the Treasurer only.

JOSHUA SMITH, *Chairman*.

H. S. BELLSMITH.

H. McMICHAEL.

On motion the report was received and the committee discharged.

Mr. J. F. Ryder was exonerated by the committee.

Mr. RYDER—As a member of that Executive Committee I desire to make a few remarks. I have in a manner been on trial, or suspected of something I had no right to do. I think it is proper that this convention should understand this matter, as to what are the duties and the rights of the Executive Committee. The constitution says the Executive Committee shall have charge of the general business of the association—it does not say that it shall not be paid or that it shall be paid for its services. The duties are not very light ones. They have to be done; and in my own experience I have been the servant of this association for four

years, and I have never asked for or desired a place, but filled it at the solicitation of friends, and have done my work in what was supposed to be an acceptable manner; in that time of four years I gave 43 days to the work of the association in absence from home. The time that I devoted to it at home I never can be able to tell, but I have felt that it was an unfairness and an injustice to me to be suspected or to be charged with anything like an irregularity. It has pleased some people to have put me under a little stigma, or they have attempted to do it, and I have felt a little restive under it, but the report of this committee which is now received gives me vindication, and rebukes those who have sought to blacken my character, and I am content. (Applause.)

The *President*—While this probably is a little irregular, I suppose you will all agree to it. Of course the motion before the house was on accepting the report of the committee and discharging it. Therefore all the discussions should be on that point, and after that we shall be ready to do something with the report, and then Mr. Ryder's remarks can come in and be substituted under that head.

What shall we do with the report? You have agreed to accept it and discharge the committee. Shall we adopt its provisions or let it drop? There seems to be a recommendation, quite a number of things are to be disposed of.

Mr. RANGER—I move that the report be placed on file.

Mr. BELLSMITH—I move as an amendment that it be laid on the table.

This motion was seconded.

The *President*—The motion before the house is that the matter lay on the table.

Mr. GENTILÉ—I rise to oppose that, Mr. President. I think it ought not to be done when so much has been said about this matter. A great many members of this association are not present here who were present and heard the discussion last year. I think that that ought to be published.

The *President*—We can lay it on the table and bring it up at any time, and then approve it if we want to. We have accepted the report and discharged the committee, but we have not done anything with it. A motion to adopt it would be in order. Does anybody desire to speak on the question before the house, which is to lay the whole matter on the table?

Mr. RYDER—I understand, Mr. President, that the motion which was before the house disposes of the matter, and I do not see for what reason you want to lay this matter on the



table when you have accepted it and discharged your Committee of Investigation. They have furnished you all the material that you want. I cannot see why that is necessary. I supposed that the matter was disposed of.

The *President*—We have not taken any action beyond that.

Mr. RYDER—You have received the report. I don't see what good can be done by laying it on the table if it is disposed of, if there is nothing further to be done with it. I think it is a very proper time now to take it up if there is.

Mr. BELLSMITH—I withdraw my motion to lay the matter on the table.

Mr. RANGER—I think the proper thing is to place the report on file, as it has been accepted and the committee has been discharged. If it is placed on file any member of this association who wishes to see what action was taken can have access to the report, and it is there before them. The report is there in the place where it belongs and it leaves the record of the gentleman who has spoken here clear, and every man knows it. We do not want this matter to be brought up or laid on the table, where it can be called up at any time.

The *President*—I just wanted merely to see if the association understood by its voting that it accepts and discharges the committee and approves of the course of its action. If this is thoroughly understood then the thing is through with. I understand that that is the general sentiment, so we will consider the thing approved. Mr. Ryder's character, which I never suspected in regard to anything, is perfectly clear.

The question was then called for.

The *President*—There is no motion before the house, that has been withdrawn.

A motion was then made by Mr. Brown to adopt the report.

The *President*—It is considered that the report is adopted and we consider the question closed.

Mr. THOMAS—In order to get this matter before the convention, I move the adoption of that report; that will bring it squarely before the house.

This motion was seconded.

The *President*—The question now is, on motion of Mr. Thomas, to adopt the report.

Mr. WARRINGTON—Mr. President, as I understand this thing now, if we adopt this we have got to act on its suggestions, and follow out the line of procedure that is spoken of there. As the question stood before, all that

I saw would be necessary was that it be placed among the archives of the association so that it could be referred to to show how this matter was settled. That was all that was necessary, unless you proceed to adopt it and to follow out its suggestions.

Mr. BROWN—That is the very reason why I moved to adopt the report. This committee was appointed last year to do this work, and they have come forward with recommendations that will enable us to avoid a repetition of this work. Therefore I am in favor of adopting the suggestions of this committee.

The *President*—That is the true parliamentary course, otherwise the report would be left so that any member at a future time could move a reconsideration, and thus open the whole question. That is my real object, that we determine this matter in such a way that it will be closed up certainly. If we do not close it up the matter will not be definitely determined. We do not want this matter left open.

The question being on the motion to adopt the report, it was agreed to unanimously.

Dr. ELLIOTT—I move that a committee be appointed to carry out the resolutions.

Agreed to.

The *President*—At the proper time I will appoint that committee.

Mr. GENTILÉ—I move that the Chair appoint a Committee on Constitution and By-Laws.

Mr. RANGER—I would inquire if there is a permanent Committee on the By-Laws and Constitution?

The *President*—No.

Mr. RANGER—Then this matter ought to be referred to that committee when it is appointed.

The question being on the motion that the President appoint a Committee of three on the Constitution and By-Laws, it was agreed to.

Mr. HULBURT—*Ladies and Gentlemen:* You are invited by the St. Louis photographers to attend an excursion to-morrow afternoon at half-past one o'clock. The expenses will be entirely borne by the St. Louis photographers. The boat leaves the foot of Vine street at 1.30 P.M. The steamer Charles P. Chouteau, one block south of the bridge. Convention badges will admit members of the convention to the boat. No others will be admitted, except the employees of the St. Louis galleries. It will be necessary to bring your badges. Be there promptly at half-past one.

On motion of Mr. Pugh, the invitation was accepted with thanks.



Mr. HULBURT—I forgot to mention one thing. Arrangements have been made so that views can be taken from the boat. The boat will go up the river above the bridge and stop for a few minutes so that both sides can be taken. Various places down the river can be taken. The party will land at Montesano Springs and will be back about half-past ten o'clock.

The *President*—I have the following communications to read:

PUBLIC LIBRARY, ST. LOUIS,  
June 23, 1886.

W. H. POTTER, Esq.,

*President, American Photographers'  
Convention.*

DEAR SIR,—I have the honor to extend to the members of your convention a cordial invitation to visit the Public Library and make use of the privileges of the library and reading-room during their stay in the city.

In behalf of the Board of Managers,

Very respectfully,

F. M. CRUNDEN, *Librarian.*

On motion, the invitation was accepted with thanks.

Mr. JOHN M. DYER—*Ladies and Gentlemen:* I desire to extend to the association the same invitation to visit the Mercantile Library. We have a large number of photo-gravures. The Library is open from 10 in the morning until 10 at night.

On motion, the invitation was accepted with thanks.

The *President*—The discussion on "Dry Plates: Causes of Failure," is now in order.

Mr. CROSS—The properties of this hall have proved themselves poor to my hearing, but I will do my best and not delay you but a few moments. There is one point that I think has been overlooked in the management of the dry plate. I think too much dependence has been placed on changing development to suit errors of exposure. In my opinion, correct results are only obtained by correct manipulations from beginning to end. Faults may be remedied by changes in the manipulation; the general result as a whole may be slightly remedied by changes of the developer. Correct exposure should be borne in mind, and that is about all I have to say.

(*To be continued.*)

Thank you for answers to my questions in BULLETIN. I think it is grand.

FRANK D. BROOKE.

## PROVIDENCE AMATEUR PHOTOGRAPHIC ASSOCIATION.

WORK FOR SUMMER, 1886.

### *Classes.*

1. Landscape: *a.* With Architecture, *b.* Without Architecture.
2. Marine Views.
3. Architecture.
4. Interiors.
5. Animals.
6. Instantaneous Effect (Except Surf, Sail and Animal).
7. Portraits: *a.* Single Figures, *b.* Groups.
8. Composition.
9. Transparencies.
10. Lantern Slides.

### *Rules.*

Any number of pictures may be entered in any or all classes; the best picture of every class shall be awarded an honor; the first six classes at least shall be silver prints. All pictures must be the work of competitor, with exception of burnishing. Date for closing of entries will be announced later.

R. W. TAFT,  
*Secretary.*

July 1, 1886.

N. B.—As we go to press we received the stenographer's correction for the Committee on the Prize Paper at St. Louis. Dr. John Nicol's name has been substituted for that of Mr. F. C. Beach, as mentioned in our "Editorial Notes."—EDS. OF BULLETIN.

## What Our Friends Would Like to Know.

N. B.—We cannot undertake to answer communications of a technical character except through the columns of the BULLETIN. Correspondents will please remember.

Q.—J. D. S. writes:—Will you please inform me, through the columns of the BULLETIN, what kind of tone E. H. will get with the bath he speaks of in the number of June 12th? Also, what formula was used to get the tone of your illustration of May 8th, or the very fine one of November 14, 1885?

A.—E. H. would get a red-brown tone with the bath you refer to. The formula of the printing bath used to make the prints for the illustration of May 8th we do not know, as they were made for us by Sarony; but the formula of O'Neil given in the BULLETIN of February 14, 1885, page 79, will give about the same tone with deep printing. The illustration of November 14, 1885, is a photo-mechanical print made in a lithographic press by the indotint process, and the color is due to the tinting of the ink with which it was printed. That a professional phototographer should take it for a silver print is no surprise to us, and speaks well for the perfection of the process by which it was produced.

Q.—F. D. B. now sends us the print he spoke of in a former letter to us. He wants to know what is the cause of the print being spoiled.

A.—It appears to us that the cause of this trouble is a defective piece of paper; just what the particular trouble is with the paper itself is hard to say, probably dampness has spoiled the albumen.

Q.—J. R. M. writes:—I would like to know through the BULLETIN if there is no way of making paper negatives transparent besides oily liquids or reoiling? It's the only objection I have to paper negatives.

A.—We know of no method that does away with the oiling of paper negatives at present. We have thought that a preparation of gelatine and glycerine, similar to that used for mounting prints sometimes, might do; but we have been too busy lately to determine the right proportions. If our correspondent will try this, we shall be glad to hear from him.

## Views Caught with the Drop Shutter.

As we go to press we receive a handsome picture of the photographers at the Convention in St. Louis grouped upon the steps of the Exposition Building and taken by GENELLI.

WE have before us a Westfield, Mass., paper, with the sad announcement of the death of MRS. GROVE H. LOOMIS, the wife of G. H. Loomis, the well-known correspondent of the BULLETIN. We extend to our bereaved friend our heartfelt sympathy and condolence in his sad loss.

MR. C. D. FREDERICKS and his youngest son, Barron, sailed for Europe in steamer Britannic on July 1st. They expect to make a trip in Great Britain and on the Continent of two months' duration. As there are few of the fraternity who apply themselves more closely to business than Mr. Fredericks, it is to be hoped that he will enjoy the long needed rest and change, returning refreshed and invigorated. We wish him *bon voyage* and immunity from *mal de mer*.

Among those to see Mr. Fredericks off were his wife and son; his brother, L. D. Fredericks; the veteran J. Gurney, his former partner, and many others.

THE Photographic Merchants' Board of Trade met in St. Louis on Monday, June 21st, at the Southern Hotel. Questions of interest to the stock-dealers and the trade generally were discussed, and the meeting adjourned until February, 1887, when the Board will meet in Chicago.

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MISS ESTELLE CLAYTON.

# ANTHONY'S Photographic Bulletin.

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Prof. CHARLES F. CHANDLER, Ph.D., LL.D., *Editor.*

ARTHUR H. ELLIOTT, Ph.D., F.C.S., *Associate Editor.*

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JULY 24, 1886.

Vol. XVII.—No. 14.

## THE EXHIBITION OF PICTURES AT ST. LOUIS.

“The glorious sun  
Stays in his course, and plays the alchymist.”

To do justice to all the handsome exhibits of pictures at the St. Louis Convention is out of the question. Their number was too great to admit of more than a mention of some of them, and but a brief review of the characteristics of the most important productions. Eight large rooms containing probably ten thousand photographs from the best artists at home and abroad gives but a poor idea of the great display that was at St. Louis. It should have been seen to be appreciated.

The St. Louis photographers kept their word to the letter when they resolved to make a good display and not compete for the prizes. Many of their pictures would have stood high amongst those who competed for medals, and would doubtless have captured several awards. We should like to go into details as to the character of these pictures, but want of space compels us to give up the idea.

G. Cramer showed a number of life-size heads and half life-size figure portraits of the finest character. This exhibit, we were told, was the result of three weeks' work in Mr. Cramer's studio, and speaks much for the industry of Mr. Wells, in addition to his fine taste in lighting and posing.

Strauss, of St. Louis, showed a number of exceedingly handsome life-size heads, together with many smaller pictures down to cabinets. The pictures of children were particularly good, and we also noted a very life-like portrait of Mrs. Strauss.

Scholten's studio made a very beautiful exhibit. Large heads, full figures, and others down to cabinets. In this collection were four charming pictures of scenes in the play of “The Willow Copse,” in which C. W. Couldock and Miss Blair took part. One of these is a figure of an old man (apparently a farmer) seated at a table thoughtfully holding a glass of toddy; a loaf of bread rests upon the table and a tea-kettle is simmering on a stand. The expression upon the face of the man, and the arrangement of the surroundings, go to make up a very artistic picture. Another of these pictures contains the same old man, together with a girlish figure leaning on his shoulder as if pouring some persuasive tones into his ear. A third picture is the same old man standing listening, with the girlish figure half kneeling and holding his hand. The fourth of these interesting groups is the same male figure seated at a table, the girl and a more matronly female figure leaning over the table as if

interested in what he is saying. The fine posing and lighting in these pictures made them well worth seeing, and the feeling of life and action in them was remarkable. It would appear (if these are not Scholten's own work) that his spirit still guides his old studio, and

“Dead he is not, but departed—for the artist never dies.”

F. W. Guerin also made a remarkably fine exhibit. It was mostly large work, tastefully framed, handsomely exhibited, and very artistically arranged. A little girl (one of St. Louis' little beauties), posed like one of Raphael's cherubs, was a very pretty picture and beautifully caught. The subject was a very pretty child, with a cherub-like face that evidently caught the artist's eye; the result is a very fine picture. Another picture in this fine collection that interested us was that of a lady in Greek costume holding a lily in her hand; the fine effect produced by the use of a dark background made this picture strikingly artistic, and an exquisite piece of composition. Another gem was a profile female face in an oval setting. Yet another fine piece of work was a figure of a lady before a pier-glass with a small mirror in her hand. But we cannot spare more space for this truly artistic and finely finished exhibit. The small work was as good as the large, in careful execution of the artistic parts and fine quality of finish. If Mr. Guerin improves next year upon the beautiful work he has shown at St. Louis, it will be a fine exhibit at Chicago that will equal his productions.

Genelli had a large exhibit of stamp photos, and also pictures of the ordinary sizes which were of fine quality. A number of gelatino-bromide enlargements were shown in this exhibit, and were of the best of this class of work.

Miss E. Hulbert, of St. Louis, showed a number of colored photographs. One large panel and a number of smaller pictures were very artistically executed.

Benecke, of St. Louis, showed a number of fine specimens of phototypes. Portraits, groups, architecture, and reproductions of fine penmanship made this a very interesting exhibit. It showed the manifold applications of the process, and the beauty of the pictures when used for book illustrations.

Hammer, of St. Louis, had a very handsome exhibit of large subjects, all well executed. The large heads were very fine and thoroughly well done, particularly the child with fancy dress and Prince Edward cap. A large frame of cabinet pictures showed an equal amount of skill in small work.

This completes the list of exhibits of our St. Louis friends, as far as we could find them. We will now take up the exhibits of the prize winners, beginning with those from American artists.

Decker & Wilbur, of Cleveland, who took a gold medal for portraits, exhibited a collection of large pictures from 16 x 20 plates that were thoroughly well executed. But to our minds the cabinets in this exhibit were its strong point; every picture was a gem.

Falk, of New York, also gold medalist for portraits, showed a fine collection of portraits with remarkably pretty faces, and a number of handsome pictures of theatrical people. The work was in all sizes, and equally well finished in every case, the dark background often being used with remarkably good effect. The whole is thoroughly characteristic of the artist. There was also another collection by the same artist, which included many fine interiors, some excellent architectural views, and a number of very artistic surf pictures, with boats upon the sea-shore.



J. W. Gehrig, of Chicago, who was also awarded a gold medal for portraits, had a collection of theatrical subjects that were finely executed in every respect. The tones of these pictures were remarkably uniform, and of a warm brown color which gave a very pleasing effect. The maroon ground upon which the pictures were arranged proved very effective.

J. Landy, of Cincinnati, had a fine collection of portraits, for which he received a gold medal. They were principally large pictures, in Mr. Landy's usual fine style, tasteful in every respect. The portraits were life-size heads, and a number of 18 x 22 full figures of actors and actresses. In many cases we noted the good use of the light background. To produce good effects against a very light background requires very careful lighting of the subject, and Mr. Landy has succeeded in this in a remarkable degree. His pictures of Othello are particularly effective in this respect, and were gems of fine photographic and artistic work. The pictures of children were very finely done, and were well worth seeing. A large frame of cabinets showed the same fine work upon small pictures.

J. A. H. Parsons, of Wheeling, W. Va., showed some large heads and a handsome frame of panels. All were of excellent quality in the matters of posing, lighting and artistic finish. He received a gold medal for portraits.

J. F. Ryder, of Cleveland, also gold medalist for portraits, as usual showed a fine collection of truly artistic work. A profile head of a lady on a white background was very beautiful. Another picture of a lady upon a large plate, three-quarter face, with a half-tone background, was also very handsome. The pictures of large heads from plates not retouched were very interesting, and showed what fine work and soft effects can be obtained without the labored finish usually put upon photographs. Another interesting feature of this exhibit was a number of pictures of scenes from "A Pantomime Rehearsal" by the Rosina Vokes Comedy Company. These were pictures on plates about 10 x 16, of figures in all kinds of difficult positions (one foot raised horizontally, for example) and taken without rests of any kind. The figures were remarkably sharp, and gave a life-like aspect to the pictures that was really wonderful.

George Barker, of Niagara Falls, obtained a gold medal for pictures other than portraits. These included a very fine collection of views taken in Florida during the past winter, and of the most artistic character. That Mr. Barker has a true artist's eye we have known from his fine views of Niagara Falls; but we have seen many views of Florida scenery, and thought it somewhat commonplace until we looked upon these new views captured last winter; now we believe it to be the veritable paradise of America. The views exhibited were scenes at St. Augustine, Fort George Island, St. John's River, Ocklawaha River, Silver Springs, Green Cove Springs, and the Upper St. John's. It is impossible to tell in words the beauty of Mr. Barker's work—it must be seen.

W. H. Jackson & Co., of Denver, Colorado, also received a gold medal for pictures not portraits. In our estimation this was the finest collection of large view work we have ever seen. The beauty and grandeur of the scenery that formed the subject of the pictures had something to do with the impression produced; but without exceedingly fine taste and skill on the part of the artist, the grand panoramic effects could not possibly have been caught so well. The collection included a 45 x 15 plate of Ouray, San Juan Mountains, showing the location of the settlement and the surrounding heights, the latter with great sharpness. The Upper Twin Lake, California, a picture 30 x 15, was also very

fine. Another fine picture, 30 x 15, was Leadville, a bird's-eye view with mountains in the distance, excavations in the foreground showing the mines, and all remarkably clear. This picture was taken upon a Stanley dry plate, and we have yet to see a piece of landscape work that will surpass it in every fine quality. Another large picture was a Colorado cattle ranch, made with the Dallmeyer wide-angle lens with the front lens removed and largest opening, instantaneous. The wonderful perfection of detail all over the plate, the foreground and the distant mountains, was truly remarkable, and made the picture the admiration of all observers. The other and smaller pictures of the collection were: "The Falls of the Blackwater," "North Flue, High Rock, Pen Mar," and a number of others. Altogether this is the best work in large views that we know of, not excepting the remarkably fine views in the Tyrol which were found in the German exhibit.

We must stop here and continue our impressions of these beautiful exhibits in the next BULLETIN.

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#### EDITORIAL NOTES.

THE French commission who had charge of the Poitevin monument have decided to use the surplus funds in obtaining medals for the various members of the commission, and also to make plaster casts of the bust of Poitevin; with the remainder of the residue of the fund they propose to issue an edition of his works. If this latter is carefully done, it will be of considerable historic value.

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WE note the death of Dr. Diamond, a veteran English photographer, who was once the editor of the *Journal of the Photographic Society*. He induced Scott Archer, the inventor of the collodion process, to take up the study of photography.

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IN Vienna recently the members of the Photographische Gesellschaft celebrated their twenty-fifth anniversary with a grand banquet and jubilee. Herr Ottomar Volkmer presided at the table, which was beautifully decorated with flowers and fruits. The *menu* was the work of Angerer & Göschl, and represented a golden sun, whose rays symbolized the art, while a female figure conducted them, by means of a lens, upon a plate held by a boy in German costume. The toothpicks contained micro-photographs of Vienna. A large number of distinguished guests were present, and many military officers, which made the gathering a very brilliant one.

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HERR C. SCHIENDL gives in the *Photographische Correspondenz* a very complete account of his work upon coal-tar colors from a photographic point of view. We have often thought that this was a rich field for research, and expect shortly to have to chronicle some new discoveries in this direction.

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THE German and English photographs that obtained the gold medals at St. Louis are now on exhibition at the store of our publishers, where many of our friends have already called to see them. Come soon, as we may have to send them away in a few weeks.

THE dry plate makers were well represented at the St. Louis Convention. Cramer, Seed, St. Louis, Ripley were all there; and Mr. Stanley intended to be there, but he found himself so busy that he could not leave his factory. We missed Messrs. Carbutt and Inglis, who always make the meetings interesting during the discussions.

AMONG the new friends we met at St. Louis was Dr. John Nicol, a genial Scotchman and a most pleasant gentleman. He is the editor of the *Photographic Beacon*, of Chicago, and we are glad that we have met him.

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### TO THE MEDAL WINNERS.

INDIANAPOLIS, IND., July 2, 1886.

You are respectfully requested to send the pictures selected by the judges from your exhibit to any one of the following committee, who are appointed to pack and send the same to the German Convention to be held in August next: Mr. G. Gennert, 54 East Tenth street; Dr. Elliott, 591 Broadway; Mr. W. U. Fuller, 423 Broome street, New York.

The pictures selected by the judges were marked thus □; but some were not notified, and probably the marks were lost in some instances, so the winners will please select from three (3) to six (6) from their exhibits, and send them to the committee in New York. Make fresh prints, if possible to make better ones, but be sure to have them in New York by July 25, 1886.

Send them without frames, and carefully wrapped in tissue and manila paper.

Parties interested will please be prompt and generous, because our success in obtaining pictures from Europe for future conventions depends in a great measure on what we may do on this occasion.

W. H. POTTER,  
Pres. P. A. of A.

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### ORTHOCHROMATIC PHOTOGRAPHY.

PHILADELPHIA, PA., July 10, 1886.

To the Editors of the BULLETIN.

In a communication to the Franklin Institute, which you reprinted a short time ago, I stated that some allowance should be made for the fact that the relative intensity of different portions of the lime-light spectrum is not the same as that of the solar spectrum, but at the same time expressed a belief that the difference was small. Further investigation of the subject proved that there is more difference than I supposed. This difference does not affect the value of my original experiment as a demonstration of the positive action of chlorophyl and eosine, and the advantage of their combination, but it does affect my estimate of the relative sensitiveness to different portions of the solar spectrum. I have therefore now made a photograph of the prismatic solar spectrum on one of my chlorophyl-stained plates, with the following result: There appears a strong action throughout the entire visible spectrum, strongest in the red below C, almost as strong throughout the violet, blue and green, and weakest in the green-yellow. The appearance of this photograph is therefore similar to that of the illustration published in the *Journal of the Franklin Institute* (July), where I stated that the



chlorophyl negative of the lime-light spectrum was of such extraordinary intensity in the red that the contrasts in that part could not be brought out in a process plate. The same comparison will probably hold good for a chlorophyl-eosine plate, which should give a photograph of the prismatic solar spectrum of nearly uniform intensity from about *A* to beyond *H*, with the weakest action near *D*.

Respectfully yours,

FRED. E. IVES.

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### GELATINE A SUBSTITUTE FOR ALBUMEN IN SILVER PRINTING.

By W. M. ASHMAN, of *England*.

[Read at the St. Louis Convention of the Photographers' Association of America, June, 1886.]

It will, I trust, be understood from the term used to qualify my contribution, that anything approaching an elaborated scientific memoir is not the sort of thing which is about to follow, since you will doubtless obtain more than a sufficiency to occupy the valuable time of the convention from abler pens than mine located nearer home.

My desire is rather to make a few practical remarks upon a subject which, though not highly scientific, is one concerning the interests of every photographer, so that upon returning to your ordinary every-day work, and thinking about those things which you have seen and heard at this gathering, you may be induced to give a share of your attention to the subject I am bringing before you.

Gelatine has displaced collodion in negative work everywhere now, and the change which has been wrought is not altogether an unsatisfactory one, while many claim for it great advantages; but gelatine has not undermined albumen in the positive printing process.

Attempts have been made commercially to bring about this change by the aid of developers, and some success has attended those efforts; but silver rapidly reduced to the metallic state by development does not form an image which pleases everybody, and, what is of equal importance, successful printing by development for business purposes is an accomplishment unknown to the majority of workers.

It is no assumption to state that a reliable commercially prepared gelatine paper has yet to be placed upon the market which shall prove an effective rival to albumen from every point of view. It can be done, however, and as the market is wide open and waiting, we may anticipate its realization before long.

In support of the opinion just expressed, it may be well to remark that Robert Offord and myself have within the last three years made numerous experiments in this direction, from which we have deduced many important points in regard to the conditions applicable to success, and these have been embodied in a series of articles recently published in the *Photographic News*.

Although a careful study of these, our joint writings, is to be commended, it is not necessary that those who have not had the opportunity to follow us should read up before starting, if they make a few simple experiments for themselves. With a view to assist those desirous of making a positive printing paper, a few plain directions are here given, which will smooth the way for those unaccustomed to breaking fresh ground, and help others in the pursuit of further research.

Primarily then a good quality of paper must be used, one free of chemical impurities, if first-rate results are to ensue. Plain sized Rives and Saxe papers answer well enough, but are expensive for general adoption. The Eastman Company, Rochester, N. Y., are sending out a capital material as a basis for their new positive films, which I am inclined to think would be just the thing for our purpose if it could be obtained uncoated. Having procured a suitable paper, the next consideration is the kind of gelatine coating which it is intended to spread thereon, and the method of achieving it. There are two very distinct ways of bringing the intended results about, the first of these being the making of a silver chloride emulsion in gelatine, and mixing with the emulsion so made a suitable proportion of silver citrate, silver oxalate, silver tartrate, or one of the other organic silver salts, also emulsified in gelatine.

This mixture after a little washing is then ready for spreading on paper in any of the following ways. Drawing over a trough containing the liquefied emulsion from a roll, as in coating carbon tissue. Pouring a measured quantity of liquid emulsion on damp paper formed into a dish by turning up the corners, as bromide paper was formerly coated. Floating in the manner adopted for albumenizing and sensitizing. Brushing on, afterwards equalizing the coating by passing through steam or over a water oven. When dry, the coated paper is ready for use, and will darken in daylight slowly or quickly as determined by the composition of the emulsion.

The second method is that of coating paper with hard colorless gelatine containing a soluble chloride and citrate or other organic salt, together with an organifying substance like casein, starch, etc., for the purpose of increasing printing vigor. Such prepared paper when dry may be stored similarly to unsensitized albumen paper, and only needs to be floated upon silver nitrate solution to render it sensitive to light, the sensitizing process being the same as with albumen.

Paper prepared by either of these processes can be made to print with speed and vigor; toned with gold; fixed in soda; bear washing without blistering, tearing or cracking; can be mounted, rolled, and, under special conditions, burnished; and, when dried in contact with glass plates that have been polished with talc, the stripped surface presents the highest degree of gloss.

Regarding permanency over albumen, little can be said at present beyond remarking that gelatine hardened with chrome alum offers considerable resistance to atmospheric influences.

I have before me such a print, which has been exposed to the influence of a south light for seventeen months, and is unaffected. A covered portion has, however, undergone change, due to contact with impure paper, so that the only evidence that can be brought forward is favorable to the use of gelatine as a substitute for albumen.

Well knowing the value of your time, and the necessity of my remarks being brief, all speculations concerning commercial advantages that may be derived will be left aside for future development, and in lieu of such, I substitute formulas which will prove a good starting point whereon to make such variations as may strike any one of you.

No. 1 is an emulsion which is fairly rapid, and is made up as follows:

A.

Citric acid.....	20 parts.
Water .....	80 "

Liquid ammonia sufficient to leave solution distinctly acid.



## B.

Gelatine (white, hard).....	45 parts.
Water .....	560 "

## Mix A and B.

## C.

Gelatine .....	45 parts.
Ammonium chloride.....	6½ "
Water .....	560 "

## D.

Silver Nitrate .....	40 parts.
Water .....	240 "
Dissolve. Divide into two parts. Mix one with C, and the other with A and B.	

Mix all together, or in such proportions as may be resolved upon, taking care that the temperature shall not at any time reach a higher point than is necessary to insure perfect solution—90 deg. F. should be the limit. Set for some hours to get a firm jelly, then squeeze it through mosquito net into cold water. Give the shredy emulsion three changes of water, which should be effected within fifteen minutes, or printing vigor will suffer. The shreds may then be rinsed in alcohol, remelted, filtered through swan's-down or sheep-skin, and the emulsion is ready for coating.

The work may be carried on in gaslight or subdued daylight, according to sensitiveness; either borax or acetate toning may be used. Splendid opals or transparencies can be made with this emulsion, when thin coatings are laid upon these surfaces.

No. 2 formula will also serve for experimental work. Good transfer paper is immersed or floated on a salting solution similar to the following:

Ammonium chloride .....	1 part.
Ammonium, sodium, or other citrate.....	1 "
Water.....	100 parts.

Citric acid sufficient to render distinctly red a leaf of blue litmus paper.

The time of immersion need not exceed one minute, and three minutes is amply long enough for floating. The surface of the paper should then be drawn over a glass rod to remove excess, which latter, if permitted to dry in spontaneously, might be productive of patches or lines. These papers are then suspended to dry, after which they should be sensitized by floating upon an acid solution of silver nitrate made acid with citric acid. The time of floating need not exceed that of salting, viz., three minutes; and when any difficulty is experienced in making the paper lie flat upon the solution—from curling in very dry weather—the same may be readily overcome by placing the paper in a damp room for a short time, so that some moisture may be absorbed before sensitizing takes place. When dry it is ready for printing, but the speed of that operation is quickened considerably by fuming. Monckhoven's enamel double transfer paper treated in the manner mentioned, toned with borax and gold, fixed and washed, and stripped from a glass surface, produces the most brilliant silver print obtainable by any known means.

All transfer papers the writer has met with, which have been fumed after sensitizing, have a tendency to blister in washing, unless hardened by means of alum. This agent may be conveniently added to either of the above baths, or the prints may be soaked after toning in a solution of common alum; in fact the use of alum at some stage is an absolute necessity when burnishing has to follow.



It is not intended that transfer paper in its present form should take the place of albumen, and the details given are rather to illustrate its capability of yielding silver prints than to recommend it; and those who will take the trouble to test the truth of these assertions may probably be led to coat paper for themselves in the manner indicated in the earlier part of this communication, viz., to employ colorless gelatine mixed with starch or other substance, plus the soluble chloride and organic salts. Paper prepared in this manner could be stored for any reasonable time without deterioration, and sensitizing could take place when required, a convenience not altogether compensated for by the extra speed attainable in the emulsion given in the No. 1 formula. I dare not occupy more of your time in detailing further the many methods of preparing sensitive gelatine surfaces, for enough has been said already to illustrate the probabilities of gelatine assuming the important position claimed for it in the title of what I fear is a very incomplete communication to place before this, the largest assembly of practical men the photographic fraternity has ever been able to bring together.

Before closing, if this further remark is not considered out of order, I should like to mention that the method of washing the fixing salt out of gelatine negatives, by the aid of a portable wire support, which I had the honor to submit to your notice at Buffalo, continues to give complete satisfaction to all who have tried it here. I have washed large numbers of negatives that way since the event referred to; and in no instance have any of them shown signs of imperfect removal of hypo.

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### IMPROVEMENTS IN PHOTOGRAPHIC PRINTING AND ENLARGING.

By DAVID COOPER, *of Rochester.*

[Presented at the St. Louis Convention of the Photographers' Association of America, June, 1886.]

WE all know what progress has been made in negative making, or if we don't we'd or'ter, in these days of gratuitous information. Thanks to the public spirited manufacturers of dry plates, the enterprising and very ably edited journals devoted to our art, and last, but not least, to the multitudinous and oft much abused (behind his back) demonstrator, popularly known in photographic vernacular as "The Dry Plate Fiend," there is a torrent of information more or less valuable being continually poured into the ear of the anxious inquirer on this subject, and that is what I mean when I say, as I just now remarked, "if you ain't you'd or'ter."

But while all this attention has been devoted to negative making, a most important subject has been almost totally neglected. I refer to the matter of positive printing. Who can say that photographic positives, so far as they relate to gallery work, have in any way advanced in fifteen years? The same silver print on albumen paper, with its accompanying inconvenience, its limited range of application, its necessarily imperfect condition unburnished, its liability to injury at some one of the many stages of its production, its provoking insensitiveness unless under the most favorable conditions of light, and last, but by no means least, the concededly unartistic result of the completed picture, which is dependent on the high gloss of the burnisher for a so-called finish. The public has noticed this, and as their acquaintance with photography is mostly cultivated through the medium of prints, they are naturally led to orally, as well as mentally, inquire: Where are the very much boasted improvements in photography?

Certainly there is nothing novel in the work they receive. A few little conceits in the matter of background, accessories, and style of mount, sums up all the claim to novelty that can possibly be made by the most pretentious in business.

The fact is just this, that the people are hungering and thirsting after some tangible proof that there is something new about the specimens of photography brought into their homes, and the question you should ask yourselves is this: Are we doing justice to our patrons, when we fail to place before them for their approval those evidences of progress which appeal to their tastes and enable them to judge of what they do or do not like? What right has any individual to assume that his judgment is infallible as to what his customers want? Give them the opportunity of expressing their own opinion on the subject, and if it costs you more to give them what they really want, they will not as a rule be unwilling to help you bear any reasonable expense.

It is not to be excepted that the fraternity will with eagerness adopt each new thing that comes along, before first satisfying themselves of the justice of its claims. This is reasonable and to be expected. No really valuable thing is ever hurt by the most careful investigation, which is rather to be courted than otherwise.

It is with the object of courting this investigation of the merits of the permanent bromide paper process, that such a variety of results have been presented at this convention by the manufacturers.

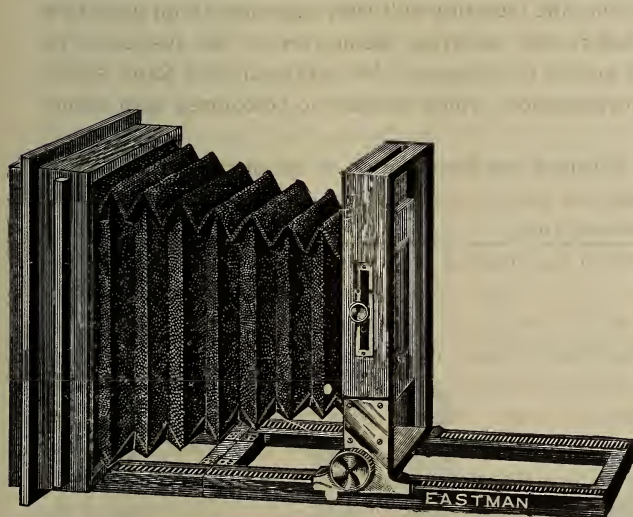
Many are the uses to which this method of printing may be adapted, as exemplified by the variety on exhibition. We find contact printing for custom work side by side with book illustration and mechanical drawings. Each possesses the characteristics particularly valued in work of these classes. In the one, softness of half tone and brilliancy both of light and shadow; in the others, intense blacks with pure and sparkling whites. But the most important of all, and that to which I will endeavor to call your special attention, is the subject of enlargement. It is no exaggeration to state that never before in the history of photography has anything like the class of work which is accomplished by this process of enlargement been placed before the public. The results are as near perfection as the comparative infancy of the method will admit. Its superiority over all other methods is admitted on sight of the results, while this conviction is intensified when its simplicity, rapidity, and certainty of operation are understood. Nothing can exceed the softness and beauty of an enlarged print, say life-size, from a well retouched and otherwise perfect cabinet negative. It is a fact that prints far superior in softness of detail are to be obtained by enlargement by this process than can be got by contact printing from the same negative on albumen paper. As this may be difficult to believe without proof, I will present you with a few samples, and then by means of this apparatus give an idea of the methods of procedure.

It may, however, be best to first give an idea of the most simple and complete apparatus found suitable for the purpose, and prepared for use with the paper, so as to secure success to the experimenter at the outset. The simplest, which may be purchased of any dealer, is represented here partly by the apparatus on this platform.

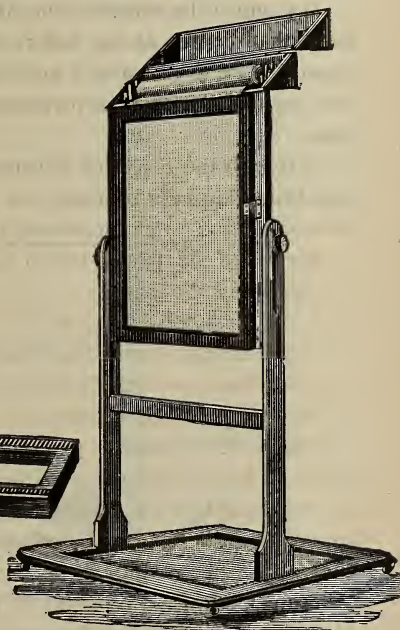
The easel, as you see, consists of a firmly supported pair of uprights, which are slotted a distance of about six inches. This admits of the focusing screen being moved up and down so as to locate your picture correctly in the center of



your sheet. On the face of the board you see a black frame, which is hinged on one side and caught by a spring catch on the other. Its object I will describe in its order. Seated on brackets, which are screwed to the back of the focusing board, is a long narrow box that is designed to hold the sensitive paper, which comes wound on a paper tube that slides on an axle journaled in the box. At the back is a brake of simple construction, which prevents the paper unwinding faster than is desired. This box is perfectly light-tight, and the dark room may be opened after use without at all affecting the paper, if kept in the box closed. As all spools fit on the same axle, any width may be used in the same box, provided the kits which come with each apparatus for adjusting the various sizes be used discreetly. Any sized enlargement to as low as  $11 \times 14$  can be centered accurately. This brings me back to the frame, which, as I noticed, passes around the face of the board. Its object is the securing of the flatness of the



THE CAMERA.

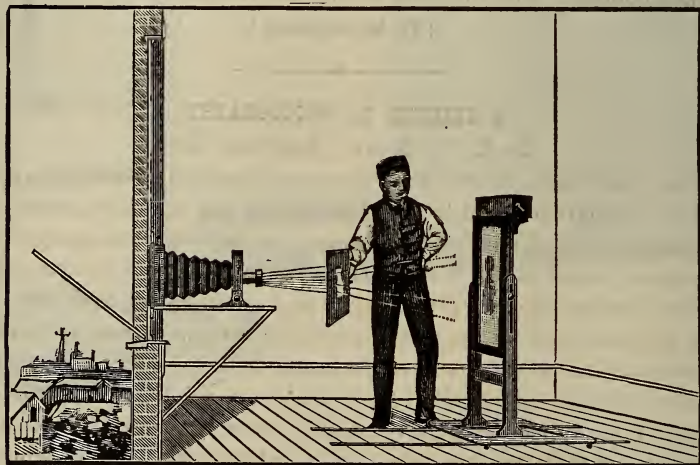


THE EASEL.

paper when stretched across the face of the board after it is pulled from the box. This frame is rabbeted on the inside to admit of the attachment of a smaller frame or kit, which again accommodates one still smaller, and so on, the whole being held together by buttons on each side. With this apparatus and its parts, with their uses accurately described, it will be seen that although it is quite possible to do very satisfactory work by an improvised apparatus, the saving of time and convenience of using such an implement must weigh greatly in the favor of its possession by the practical worker. As a very necessary adjunct to this portion of the apparatus, we will examine the enlarging camera, which is a part of the outfit. While possessing all the appearance of an ordinary cone view camera, it will be found on closer inspection to be very different at the end on which the plate holder usually sits. This is provided with a ground glass, which is a fixture, and is intended as an equalizer of the light that passes through it to the negative, which is adjusted by means of a carrier and kits that will accommodate



every sized negative from a  $3\frac{1}{4} \times 4\frac{1}{4}$  to  $8 \times 10$ . This apparatus in the simple form is intended to be used with daylight, and is fixed in an aperture in the window of a room darkened for the purpose. A suitable lens should be mounted on the front, which is provided with a rack and pinion movement for focusing, and rising and falling front, very useful in correctly centering the picture. The manner of focusing is as follows: Place your negative in position, and the easel as nearly as possible at right angles to the lens (this is easily accomplished, as each apparatus is furnished with ways, which should be screwed to the floor to secure certainty of position). Uncap the lens and the picture will appear on the screen; the size may be increased or decreased by having the easel nearer or further from the lens as may be desired; further in the first case and *vice versa*. The sharpening of the image is accomplished with the rack and pinion on the camera. All being sharp, cap the lens and open the spool box, unclasp the square frame and throw it back, pull down enough paper for use, and swing back the frame to its original position, and the paper will be held firmly. Now close the box and uncap the lens. Time according to your judgment of the circumstances. Experience only will determine this. I will now proceed to demonstrate the working of the apparatus on the stage, and give a few hints on the way of obtaining results from a negative superior to the quality of its printing character on albumen paper.



OPERATION OF VIGNETTING.

Before commencing the operation, I will pass around for your inspection some samples of work by this method. You will observe that they represent two pictures—which we will number 1 and 2—from the same negative, No. 1 being timed in the face, but lacking in the drapery; No. 2 fully exposed, with soft detail all over. The first represents the result from that class of negative unaided, the second shows the effect of auxiliary printing, and demonstrates not only what may be accomplished in the way of improving the result from a poor negative, but the possibility of enhancing the valuable qualities of a really good one. I will now throw on the screen, or focusing board of the easel, an image of the negative from which these prints were made, reduced to convenient size, and then exemplify both ways of operating.

Having obtained the focus, I cap the lens and open the light-tight box on the upper part of the easel, and, taking hold of the loose end of the sensitive paper therein contained, draw down sufficient to accommodate the dimensions of the picture desired. Closing the box, and holding in the right hand this piece of straw-board, of sufficient size to completely cover the margins of the picture—admitting the image through an aperture in the center of suitable form for vignetting purposes—cautiously uncap the lens, gently moving the vignetting board back and forth to insure softness of blend. We give ten seconds over the whole image. This we know is sufficient time for the face and thinner portions of the negative. Now recap the lens, and take another piece of card-board as large as the first, but with an aperture no greater than will admit such portions of the bust and drapery as it is desired to aid by additional printing. Again uncap the lens, using the card-board as in the first case, only being careful to cover up those parts which judgment assures us are already sufficiently timed, and proceed with another exposure of ten seconds. Thus you see we secure just twice as much time on the denser parts as on the thinner, with the result that the image will appear like the print No. 2 exhibited, while No. 1 shows what the effect would have been if we had been contented with ten seconds over all. Extra time over the whole image would not answer the same purpose, as then the shadows would be overdone. This local aid may be applied to any class of negative presenting marked contrasts, with the most satisfactory results.

*(To be continued.)*

### A TRIBUTE TO PHOTOGRAPHY.

By C. T. STUART, *Hartford, Conn.*

[Read at the St. Louis Convention of the Photographers' Association of America, June, 1886.]

It is exceedingly pleasant to note that our art has not deteriorated since the last convention, which I still hold in memory as one of the pleasant events of the Photographers' Association of America. The exhibition of another year's work here shows conclusively that photography is in good hands, and only needs the constant application of an energizing spirit to continue its rise upwards and onward Excelsior-like, to entwine it in the hearts of the people. Composed as it is of elements that are practically inexhaustible in resource, and abounding in devices and contrivances, it simply remains for us to properly rise to and grasp the situation, when it becomes clear that success must be inevitable. Let it always be our aim to keep pace with the marvelous growth of our art—the pride of our lives—that seems to grow by its own law of attraction and necessity; and by faithfulness, integrity, and unwearied industry, place it upon that basis which it shall deservedly merit for its universal respect and patronage. One of our mottoes should be “strive hard to please” both our customer and ourselves, for certainly there is a more heartfelt glow of inner satisfaction in pleasing the patron than always appears upon the surface; in fact a gratifying sense of pride, without which, in my estimation, our daily toil would become decidedly prosaic. The past improvements and present condition of photography give high promise for its future.

Do your duty—stand by the photographic ship. Fame and reward are the powerful incentives which will ultimately reach you. Attend to the trifles, for inasmuch as trifles make the sum of human things, they are also necessary to our



success. How many assembled in this hall owe to photography a debt of gratitude. It is true that those who follow our profession have their sorrows as well as joys, the latter, however, more than neutralizing the former. It will generally be observed that the successful worker, to a certain extent at least, is quite invincible, possesses an acknowledged capacity of discernment, and an unswerving loyalty of heart to his chosen profession. In the limited sphere of your studies at home, cultivate the graces of gentleness, yet firmness; of patience and generosity to employees as well as patrons. You will find them the "loadstone magnetic" that will contribute to the fullness of your success. Many cases of ill success in our business can almost invariably be traced to lack of will power, idleness, extravagance, and dissipation. The stages of photographic careers I have divided into three. The first is decidedly romantic, and he thinks he knows it all; the second may, I think, be rightly termed "humiliation," as we have now become convinced that we know so little (this is the hopeful stage)—the most of us I think belong to this; and the third we will name "philosophic," and the man who lives to get there after having passed through an experience varied with the aforesaid romance and humiliation, will be transformed into so much knowledge and goodness as to make it equal to saying good-by as to trust him near the "air-car" which will then be making regular trips. We read in the great Book of books where King David was forbidden the erection of a temple for the worship of God because he had shed blood, and with noble unselfishness he, before his death, laid up the materials by which his son Solomon might have the glory of erecting it. The application of the moral to this is plain.

Let us then imitate the glorious example of the ancient king and bequeath to those who follow us, at least here in America, where art is building her "rosy bowers," materials of constancy, professional pride and love of knowledge, that they may build the future temple of photography, seeing the probable completion of which already excites impatient expectation from the scientific world. The photographic finger with graceful curve points upward, and with cultivated intellectual development must lead to increased popular growth and power. Tried by the generous range of its possibilities, it surpasses all other professions. The photographic fire still burns, its effects can be plainly seen, its heat felt, and the brilliant effulgence of its tremendous rays of light safely guides the course of its devotees.

We should surround ourselves with influences refining and elevating, these will then form the basis for education of the public and ourselves, which must result in stimulating and expanding an increase.

Be ever vigilant and thus keep off the corroding rust of inactivity. Vigilance yields a rich reward.

We all know that there exists in our natures latent capabilities unexercised, perhaps unsuspected, which are susceptible of as much development as the lights and shades in the delicate and sensitive films we daily work.

This Convention of 1886, so well and largely attended, places one more milestone on the good road to the creditable history of our beautiful and fascinating art. That it has now permanently won its place in every home, is undisputed; and we note this feature, that where formerly it was considered an unnecessary luxury, it has now become a recognized necessity in the humblest circle.

How much it has done for human affections may never be known, and we must ever owe to it the debt of gratitude. Were we obliged to drop from the



list one of the art sciences, which one, tell me, would be missed so much as photography? I think more pictures were produced the past year than ever before, and this brings up the thought that while the production has become so prolific, and the prices depressed, it would be a good idea for us, as members of this association, to put our shoulders to the wheel of "quality," and thus not only maintain our reputations as progressive, but also stay the downward prices. Resolve not to remain in the "slough of despond," but at it early and late, until, by constant endeavor, like the valiant knights of old, pave the way to fame. One peculiarity of photography is that while it hardly notices insipidity of feeling it richly recognizes enthusiasm.

These annual meetings, where are gathered together the friends, admirers and workers of photography, are exceedingly pleasant, and I hope that, attended as they are so strongly with the social spirit, will always be perpetuated. Let not envy, mammon, hatred, or any uncharitableness whatever, stand in the way of our rising art, which is yet destined to make the world glad. I am a firm believer that we gradually, but surely, are erecting a colossal monument of future fame to photography, and this too in a quiet but effectual manner, as without the aid of tumultuous thousands they are tossed to the top where they immediately cling and fit, fragmentary morsels of improved practical formula, until finally, after many changes kaleidoscopic, and often swifter than the weaver's shuttle, there are destined to be presented to an ever-anxious world, processes well-nigh complete.

We have now reached that point in the grand triumphal march of our wonderful art where there is no turn back, not even a pause.

Photography, an art unrivaled, that more than all others is characteristically capable of creating and crowning the reputation of its competent and faithful followers, and, youthful as it is, is one of the most complete and evenly balanced, ingenious and interesting of the art sciences; having the effect to continually spur on the sympathetic and ambitious spirit that permits itself to roam in its inviting field of subtlety and artistic executions; therefore, pardon me if I affectionately lean toward it like one imbued as with a loyal impulse to an art to which I have consecrated my life.

Photography is very friendly as well as just; for while its truthful and fascinating delineations are equally at home with love or lightning, it gracefully enfolds within its capacious arms history and religion, and also, if these were not enough, kindly lends a helpful hand to manufactures, banking and all commerce.

To the younger members of our profession I would say, be watchful and observant, inquisitive and careful, in the infant blossom of your career, until that line is safely passed where your minds have become enthroned and fixed to such an extent as to make it impossible to divert you from the life, soul and secret of photographic success.

Simplicity and harmony should be the two great points for your guidance in the introduction of accessories or innovations upon known principles. Then it follows that the results must be well balanced and reflect the character of your individual workmanship.

Good taste and quick and accurate sense of observation are essential to success; and may I not remark, that on the equipoise of the photographer's temper depends to a considerable degree his success.

Before us is stretched, not only the history of photography in the past and the

improved work of to-day, but to the imaginative eye, the wondrous photographic panorama of the future.

The sweetest lives are those that duty wed,  
 Whose deeds both great and small,  
 Are close knit strands of an unbroken thread  
 Where love ennobles all.  
 The world may sound no trumpets, ring no bells,  
 The photographic book the truthful, shining record tells.  
 Who the happy photographer? He  
 While scanning his professional life,  
 Can truly say with conscience free,  
 'Twas faithful to photography.

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### THE EXHIBIT OF APPARATUS AT ST. LOUIS.

WE were compelled to spend so much time looking at the pictures at St. Louis, that we were only able to take a glance at the exhibition of novelties in the way of apparatus. Nevertheless we saw much that convinced us that the manufacturers and inventors of devices to facilitate photography are alive to the needs of the profession, and keep well abreast of the demands of the fraternity. We don't expect that we saw everything new, but we think there was nothing of a meritorious character that we were not shown and got some idea of its value to photographers.

The display was a large one and fully up to that of previous exhibitions, in spite of the fact that one of our large manufacturers did not make an exhibit. Everybody that helped to make the display interesting was fully repaid for his trouble, and from conversation with those who had charge of the apparatus, it was evident that all were well recompensed for the trouble they took to make a handsome show.

As usual, the background artists were well represented. Knapp & Caldwell, of Jersey City, had a fine exhibit of their various accessories for the studio. These gentlemen had a number of combination pieces that served many needs, being adjustable to suit a variety of circumstances. An ingenious swing, a rustic bridge, and a peculiarly constructed tree were among the objects of interest that we noted.

W. J. Bryant, of La Porte, Indiana, had a very large display of backgrounds that were tastefully executed and well displayed. The work upon these accessories was thoroughly well executed, and much admired by all who saw them.

Seavey, of New York, had an uncommonly handsome display of his well-known backgrounds, which were exhibited in a very novel manner. A sort of stage was erected, the front of which was a large gilt frame, and to give a better idea of the effect of the backgrounds, which formed the back of the stage, a lay figure of a lady in a walking costume was placed in various positions in front.

Spurgin, of St. Louis, also had a handsome exhibit of backgrounds.

The various plate makers had their usual pyramids of plates of all sizes, and examples of the work done upon them.

In the matter of apparatus, our publishers, E. & H. T. Anthony & Co., certainly deserve the palm for their large and handsome display. This was in charge of Mr. Geo. Ayres, whose well-known courtesy and painstaking attention made this exhibit the center of attraction. In this display were to be seen a larger number of new, well-made, and substantial pieces of apparatus than was

ever before exhibited at any convention; the result of ten months' work in the factories of our publishers and the ingenious brains of those who have charge of them. We cannot find space to enumerate all these new devices, many of which we have already noticed in the columns of the BULLETIN. There were the various developments of the camera, Novelette, Duplex Novelette, and others that were much admired by all who saw them. The Duplex Novelette Camera appeared to attract a good deal of attention, owing to its readily being changed from 5 x 8 to 8 x 10. The Triplex Tripod was also an ingenious variety of this needful piece of apparatus, while an improved form of the telescopic tripod was also much admired, and the little Patent Fairy Tripod interested every one. In the matter of detective cameras, the new Satchel Camera pleased all who saw it. Its neat appearance and thoroughly good finish called forth many words of praise, and a number of orders for this ingenious instrument were given at the St. Louis Convention. It must be seen to be appreciated, although we described it some time ago in the pages of the BULLETIN. We have only space to mention one other novelty exhibited in our publishers' display, that is, the Universal Easel. This is an easel for use in making enlargements, and is so constructed that it can be folded into a very small space for carrying. It has a large number of adjustments, and appears to us to be well adapted to its purpose.

J. C. Somerville, of St. Louis, had a large exhibit of cameras and apparatus of various kinds, as also did H. A. Hyatt of the same city. We do not remember anything novel in these exhibits, but the apparatus shown was of a high order and attracted many to the stands of both the gentlemen above mentioned.

As usual, W. G. Entrekin had a large display of his well known burnishers. These are very handsome pieces of mechanism, and when arranged in their various sizes make a fine exhibit. The novelty in this exhibit was a rotary burnisher of peculiar design, which attracted considerable attention, owing to its being very like that exhibited at another stand, and it is claimed that it in some way interferes with some patent. We don't understand the merits of the case, but the controversy caused considerable amusement to those not interested, and the lawyers are soon to settle it.

Allen Bros., of Detroit, had a large display of the Suter lenses and the work done with them.

A. M. Collins, Sons & Co., of Philadelphia, had an exceptionally fine exhibit of cards and mounts. The variety and beauty of their work needs to be seen, no words of ours can give an idea of the numerous styles of cards and mounts made by this large and enterprising firm. That their work is artistic goes without saying; that it is well executed everybody knows; and the fine quality of the materials they use has obtained for them a world-wide reputation.

Lieber & Co., of Indianapolis, had a very neat and attractive display, and in our hurried glance we probably overlooked some novelties.

W. D. Gatchel, of Louisville, Ky., also had a good exhibit, but lack of time prevented a careful examination.

The Acme Burnisher Co., of Syracuse, N. Y., had a display of their particular variety of burnisher, and showed good work done with it.

The Eastman Dry Plate and Film Co. had a small exhibit of their paper negatives and prints made from them; but their efforts were directed in the line of gelatino-bromide enlargements, of which we shall have something to say under our review of the pictures at St. Louis. But we cannot pass their stand in the



apparatus hall without noting a very ingenious detective camera which they are now getting ready. It is very hard to describe, and we shall not attempt to do so; sufficient to say that it is very ingenious, light and carefully designed for the purpose of snap-shutter work. The shutter of this camera is a very original device—it is called an “alligator shutter,” and well deserves the name.

Smith & Pattison, of Chicago, had a fine display of accessories and large pictures. They also had a large exhibit of burnishers of the Baldwin type, and showed good work done with them. They also had what they call a quadruplex burnisher, which is an improvement on Baldwin's, using four gear wheels to actuate the rollers, and by this means they can take very thick or thin cards without adjustment.

George Murphy, of New York, had a very handsome exhibit, the most conspicuous thing about which was a lot of exceedingly fine draperies for studios, reception rooms, etc. This was the best display of this class of accessories at the convention. Mr. Murphy also showed us the Nash Detective Camera. It is very like a large black cigar box, and is arranged to work continuously, a dozen plates being placed in it at once, and then exposed one after the other without opening the camera. We did not see any pictures made with the instrument; but it looks practicable.

Blair & Prince had a fine exhibit of their well-known cameras. We did not note any special novelties in this exhibit; but there were many little improvements in the details of the manufacture of their cameras that keep them well abreast of the times; this is especially true of the Lucidograph Camera, which is now a very perfect little instrument of its class.

Sweet, Wallach & Co., of Chicago, had a handsome display of artificial flowers and other accessories. Also a fine exhibit of Gundlach lenses; and here we found Collins' focusing attachment to the camera that does away with the ground glass. This latter device is simply a hole in the front of the camera through which you look upon the image formed by the lens upon a piece of opaque card placed where the ground glass is usually situated.

W. H. Walmsley, of Philadelphia, had a fine display of Beck lenses and examples of good work done with them. He also showed an improved shutter, made upon the English “Instantograph” principle, which is light and very effective. Mr. Walmsley being an expert microscopist, has designed a very good photo-micrographic camera, and he exhibited some exceedingly fine work done with it.

Among those who had specialties we note Mr. Hoover, with his beautifully made shutter, which works in the position of the diaphragm of the lens. The examples of pictures made with this shutter upon the Ripley plates were very fine.

Mr. Benster was also at St. Louis with his diaphragm shutter, which interested quite a crowd of observers.

Mr. Buchanan, of Buchanan, Smedley & Bromley, had a fine exhibit of platinotypes, that were exceedingly soft and beautiful.

We don't mean to say that the above includes everything that was to be seen in the way of apparatus at St. Louis; but believe we have noted most of the novelties. That the apparatus exhibit was a grand success all who took part in it will admit, and there is no doubt the display in Chicago will be fully equal to, if it does not surpass it. The best manufacturers take a lively interest in these exhibitions, and it is certainly to their advantage to do so, for they must keep pace with the demands of the fraternity or cease to exist.

## AN ENGLISH PHOTOGRAPHIC CONVENTION.

FROM a communication from Mr. J. J. Briginshaw, the Secretary of the London and Provincial Photographic Association, we quote the following:

"I may tell you that I have succeeded in arranging preliminaries for an English Photographic Convention. This will take place at Derby on the 12th, 13th and 14th of August next. The proceedings will be: Mornings—Excursions with the camera to places of interest in the vicinity; Evenings—Reading of papers, demonstrations, lantern exhibitions, etc. I have a number of papers already promised.

Yours faithfully,

J. J. BRIGINSHAW.

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To my mind there is no toy for children of a larger growth that compares in fascination with the photographic camera. It makes every one his own Thackeray, Dickens, or Tourguéneff, and enables him in the twinkling of an eye to take topographical and personal notes of unimpeachable accuracy and inexhaustible interest. I was looking last week at half a dozen instantaneous views taken with a detective camera by a journalist and a publisher while strolling about town a short time before. They were the merest scraps of blue paper, but the impressions were clear-cut and life-like to a degree. One of them showed the drinking-fountain in Union Square opposite Tiffany's, with the allegorical group which surmounts it almost literally reproduced in a group of human beings standing by its side. The work of the sculptor suffered badly in the comparison. Another showed the Farragut Monument in Madison Square, with a couple of plump young girls seated on the bench at its base, their faces beaming with mirth and curiosity.—*The Critic*.

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CONTINUING their walk up Fifth avenue, after capturing this view, the publisher chanced to think of Mr. George Vanderbilt, and was just telling his friend of the young man's interest in books and literature, when Mr. Vanderbilt himself brushed by them, with long strides that threatened to take him out of sight in half a minute. "There he goes now," said the publisher. "Which is he—that tall young fellow just ahead of us?" And before you could say Jack Robinson the journalist had that part of Fifth avenue firmly fixed in his detective camera. There was the Hotel Brunswick, the smooth pavement in front of it teeming with various illustrations of "the horse in motion," and the sidewalk opposite alive with people moving up and down in happy unconsciousness that their features, forms and general look were then and there being made matter of record for all time. The most conspicuous figure is that of Mr. Vanderbilt, whose back is turned, but who is so accurately portrayed that a friend would probably recognize him at a glance. Even the mourning-band around his hat is distinctly visible. A photographic outfit of this kind costs, I am told, about eighty dollars. When I call up the chimney to Santa Claus next Christmas Eve, I shall not forget to mention a detective camera as one of the trifles I am most desirous of possessing—and I shall surely expect to find one in the toe of my stocking the next day!—*The Critic*.

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I RECEIVE the BULLETIN regularly, and find very valuable information in it.

EDWARD CANTELL,

British Columbia.



# ANTHONY'S Photographic Bulletin.

EDITED BY

Prof. C. F. CHANDLER, Ph.D., LL.D.,  
Aided by ARTHUR H. ELLIOTT, Ph.D., F.C.S.,  
and a corps of practical assistants.

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be continued—whether for one, six, twelve or twenty-  
four issues.

E. & H. T. ANTHONY & CO., Publishers.

## MINNEAPOLIS AMATEUR PHOTO- GRAPHIC CLUB.

THE regular monthly meeting of the club  
was held at the club room July 14th, with the  
*President* in the chair.

It was decided to make an exhibit of ama-  
teur work of the home club, and outside clubs  
if possible, at the Industrial Exposition, to be  
opened here August 21st, word having been  
received from the directors that choice space  
in the art gallery had kindly been reserved for  
that purpose.

While the club did not feel in a financial  
position to offer prizes, it was decided to invite  
other similar organizations to send frames of  
pictures, and the club to guarantee all expenses  
of the same and to return them in good order.

Messrs. Sheperd and Fassoldt were ap-  
pointed a committee to procure negatives from  
members, and have pictures printed and  
framed for exhibit at the club's expense.

Mr. Henry C. Stryker was elected a mem-  
ber.

After the regular business meeting, a paper  
was read by Mr. A. C. Loring on exposure  
and development, or "A Weak Development  
of a Strong Subject."

It is the intention of the club, in future, to  
have a paper read at each meeting by some  
member of the club, on some subject both in-  
structive and interesting, after which to have  
a discussion of the matter by members.

The prize was awarded to Mr. Fassoldt, for  
an instantaneous view taken on one of the  
docks at Lake Minnetonka, with a party of  
boys having a foot race.

It was taken on a Minneapolis plate, and  
was quite extraordinary for its rapidity, clear-  
ness, and detail.

R. D. CLEVELAND,

*Secretary.*

## THE PHOTOGRAPHERS' ASSOCIATION OF AMERICA.

*Second Day—Continued.*

Mr. GENTILÉ—I will now present the Re-  
port of the Committee on the Death of the late  
Henry T. Anthony.

*Mr. President and Members of the Photogra-  
phers' Association of America.*

Just before the adjournment of the meeting  
held at Buffalo, N. Y., last year, your Presi-  
dent appointed Mr. J. Traill Taylor and the  
undersigned a committee to draw up resolu-  
tions with regard to the death of the late  
Henry T. Anthony. Mr. Taylor being abroad,  
I submit for your approbation the following:

*Whereas*, In my report on the progress of  
photography last year, I mentioned the great  
and irreparable loss photography had sus-  
tained in the death of Mr. Henry T. Anthony,  
a gentleman who was much beloved by all who  
knew him. Perhaps all the members of the  
Photographers' Association of America are  
not aware of the great services rendered by  
that estimable gentleman to our art-science.  
In the early days of the introduction of photog-  
raphy into the United States no one did more  
to spread the knowledge of the art and assist  
those engaged in its mysteries than Mr. An-  
thony.

I know that he rendered most substantial  
aid to many an artist, not only with words and  
advice, but with pecuniary assistance when  
they stood in need of it, and it was always  
done in the most kindly and unostentatious  
manner; in fact it will never be known the  
amounts that this benevolent and kind-hearted  
man bestowed on those whom he knew to be  
in want of assistance; he aided them with a  
free hand, and not with a pittance—giving  
large sums of money, often sufficient to start  
in business. I have the assurance from parties  
who were the recipients of his generosity, that



he never asked for a return of the same; therefore the following resolutions are the least we can pass.

*Resolved*, That in the death last year of Mr. Henry T. Anthony the whole photographic fraternity sustains a loss of one of its most valued supports.

*Resolved*, That this association have a memorial tablet presented to the firm, to be placed by them in an appropriate place, with a suitable inscription marking the esteem in which his memory is held by the Photographers' Association of America.

C. GENTILÉ, *Committee*.

On motion of Mr. Pitman the report was received, the committee discharged, and the report was adopted.

The *President*—I will appoint the following Committee on Constitution and By-Laws: Messrs. J. F. Ryder, James Landy, H. F. Bell-smith.

On account of the inability to hear, the further reading of papers was dispensed with.

The *President*—There is just one other matter before we adjourn which may possibly come up. I have got but one matter and we will adjourn. You all know that I am the President of the Association, and I am fully aware that there are lots of ambitious men in it, and I believe that there is nothing in the world so encouraging as encouragement. Now, when I accepted this office I was aware of my own shortcomings, and I am not going to criticise any of the officers when I say that I think some of them should be in as long as they maintain their good behaviour, as long as they show a good record. Now, when I started out I had an idea that there should be a service of one term. I had no idea of accepting office of any kind, and I felt that I would not accept office even if it came by a unanimous vote, because, in the first place, there are plenty of men here older than I am, with more experience, just as competent to fill the offices as I am, and they have not been recognized. I am willing to step back and give these men a chance. On that principle I have laid out work for the next year that may take me five years and perhaps ten, but I expect to get through next year—I am not going to give it away what it is. I have got it laid out ahead, outside of my regular business. I have got to a time of life when I must commence if I ever commence; therefore I resign the office that I have been nominated to on the Executive Committee. I do this, so that the Committee may put some one in my place.

At this point the Convention adjourned till Thursday morning, June 24th, at 9 A.M.

### *Third Day.*

ST. LOUIS, June 24, 1886.

The *President*—The Convention will please come to order. I have got but one announcement to make. I will read this telegram, which is dated June 23, 1886:

ALEXANDRIA BAY, N. Y.

To W. H. POTTER,

*President of Photographers' Association,*  
Music Hall, St. Louis, Mo.

Edward Anthony sends greeting to the photographers in convention at St. Louis, and wishes them a happy and profitable time.

The first business in order is the discussion on dry plates and the causes of failure, this being the unfinished business from yesterday. Will somebody start the discussion?

Dr. NICOL—*Mr. Chairman*: Simply with a view of setting the ball rolling, I will take the liberty of saying that one of the most frequent causes of failure of dry plates, judging not only from what I saw in the hall, but what I have seen all over the country, seems to be the simplest and most easily avoided of all causes, and that is the removing of the plate from the hypo solution before it has had time to dissolve the hyposulphite of silver that it has formed. The result, however, as most of you, and probably all of you, know, is that on exposure to light there is the formation of a yellow deposit. It would be supposed that old stagers would know better, but I recently saw in a store a little book of instructions where the order was given, or the recommendation, to remove the plate as soon as the white creamy appearance was gone. Now all those who have done much dry plate working know that the plate is not then ready to be removed from the bath. The first change when the plate is placed in the hypo bath is to convert the bromide of silver into a two-fold double salt of the hyposulphite of silver and soda. The salt is not visible. Nothing is seen, and if the plate is removed immediately after the white bromide disappears, the smaller structure of the gelatine is still charged with the double salt of hyposulphite of silver and soda, and if it is not left a minute or two—I would recommend two minutes—if it is not left sufficiently long for the hyposulphite to be removed, when placed in the washing water, the hyposulphite of silver, being insoluble, is not removed by the mere washing one gives to it, that is to say, no amount of

washing with water will remove the insoluble hyposulphite of silver, and when it is brought into the light—not at once, but in a minute or two minutes—the whole plate, or such portions as are not cleared of the hyposulphite of silver, turns yellow. This is, as I have said, one of the causes of failure, and the only advice to give is, never remove the plate from the hyposulphite of silver too soon. I say this, always leave the plate two minutes after the white creamy yellow bromide has disappeared.

Mr. CORMANY—*Mr. President and Gentlemen*: I want to say a word in regard to this subject, and it is this. A great many failures occur from taking the plate out too soon; that is, setting it up to wash too soon, but a plate may be taken up and examined before the bromide of silver is eaten out, and replaced in the bath without any injury to the negative whatever.

The *President*—I think that that branch is thoroughly understood. This question was up last year. There is another point, and that is the developer, but we will have that when the subject of the dark room is reached. The other cause of failure is where negatives are properly fixed and not properly washed. Now, will somebody speak to that point.

Mr. D. R. CLARKE—Frequently after washing a picture we notice a yellow color which oftentimes must be removed. This can be done by the use of a preparation of ten ounces of a saturated solution of alum to one ounce of oxalic acid. That solution will usually remove the yellow color, and reduce the strength of the negative. My experience is, in taking an 18 x 22 plate, which I made two weeks ago, and which I thought was thoroughly fixed; on examining it I noticed the yellow, and I thought I would remove the yellow by immersing in this alum oxalate, but it turned the picture yellow, and all attempts to remove it have been without avail to me. My experience is, if you wish to remove the color from the negative after being fixed, you must be sure it is thoroughly fixed, or you will spoil the negative.

The *President*—I will say on that point that I have had some old negatives stained in that way. I expressed myself on this point a year ago, about the stains in negatives, and where they are stained in this manner it is because the negatives were not thoroughly fixed and thoroughly washed; where the negative faded out, became weak, this was where it was thoroughly fixed but not thoroughly washed. I got hold of my negative, one of this kind, where there was a stain around through the

center of the negative. I have some negatives which several years ago exhibited these changes in these unfixed spots. This is the way I discovered the cause. I found the negative unfixed in that spot. I had an operator who thought that he could take that out by the use of bichromate of potassium, but we came to the conclusion that nothing would take that stain out that would not take out the image. There is no way of getting rid of it without destroying the negative. Are there any further remarks on this subject?

Mr. BECKWITH—Speaking of this matter reminds me that I had a negative in just such a condition, but unfortunately the original of the negative was dead, and an order came for some photographs from that negative. One whole side of the negative was of this yellow color. In order to fill the order, I took the negative to our dark room and made a transparency. Before doing so, I placed a sheet of yellow gelatine in front of the negative and made my exposure through the yellow gelatine and got a positive free of the stains, and of even color. From that I reproduced and obtained a good negative, from which the order was filled. I think it is a point worth remembering, in case our brethren of the profession happen to get caught in the same way, that would be a method of getting out of it.

*A Member*—That is a good thing.

The *President*—Yes; and that reminds me of a story too. Where we can get over the difficulty of a stain of that kind it is worth doing. There are a great many negatives which you cannot copy. One portion of the negative may print through, but will print very slowly. For instance, if there is a stain on one side of the negative you will have to print, vignette—take and put a tissue paper on of sufficient thickness to cover the weak side and let the full force of the light come upon the side that is discolored. On the side not discolored you put these thicknesses of tissue paper so as to balance the chemical result.

Now as I suppose we have spent all the time which it is necessary to spend on this subject, and as I think we have thoroughly covered the ground, the next thing is the paper by Mr. Fred. H. Wilson; subject, "Is Photography Art?" [See next BULLETIN.] This paper was read by the Secretary.

Mr. Gentilé moved a vote of thanks be tendered to Mr. Wilson for his paper.

Agreed to.

The *President*—I will now appoint the Henry Anthony Memorial Committee: Messrs.



E. Decker; Courtney, Canton, Ohio; Charles Smith, Peoria.

The paper by Dr. Eder on "The Progress of Photography in Germany and Austria" [see page 362, former BULLETIN] was read by Dr. Elliott, and on motion of Mr. Cooper a vote of thanks was tendered to Dr. Eder for his excellent and valuable paper.

On motion of Mr. Cooper a further vote of thanks was tendered to Dr. Elliott for the very able manner in which he read the paper.

The *President*—The next in order is new business. I have the following resolution to read.

*Resolved*, By the Photographers' Association of America, that the action of our good friends and brother photographers, J. F. Ryder and J. H. Kent, while acting in the capacity of members of the Executive Committee of the association, be heartily indorsed by the association as being for the best interests and good of the association.

This resolution was signed by L. C. Overpeck.

On motion the resolution was adopted.

The *President*—Are there any remarks to be made on this motion?

Mr. OVERPECK—The reason I offered that resolution was in order to make this matter more clearly on the minutes; I think that the mere receiving of the report yesterday does not make it clear enough about these two good gentlemen, members of the association; it may be clear enough to all present, but for the future I think it necessary that some action should be taken.

The *President*—The first motion was to receive the report and it was considered as adopting the report, or accepting the report, but by holding out that that was not done the report is just exactly in the same condition as laying the matter on the table, and it can be taken up at any time. The mere receiving of the report is not accepting it and adopting it, but we carried the point so far that it was adopted. I have no objection to it whatever and I will put it.

The question being on the motion to adopt the resolution, it was agreed to unanimously.

Mr. JOSHUA SMITH—I would make a motion that a committee be appointed by the chair with power to incorporate this association under the laws of the State of Illinois.

This motion was seconded.

Mr. JOSHUA SMITH—Illinois gave birth to this association and I for one would feel proud to have this association incorporated under the laws of that State.

The *President*—You have heard the motion that a committee be appointed for the incorporation of this association. It has been seconded, and it is now before you.

The resolution was then agreed to.

The *President*—I appoint on that committee Messrs. Brand, Douglass, and Gentilé. They are of Chicago, and can attend to this matter, and when you meet there next year you can finish up the business, or you need not do it, then. Of course this is just the first step.

We will now have a paper by Mrs. Lockwood, of Wisconsin. The name of the paper is "Yesterday and To-day; or, Justice to All." [See next BULLETIN.]

The paper was then read by the Secretary, Mr. McMichael.

On motion a vote of thanks was tendered to Mrs. W. Lockwood for her able paper.

The *President*—In 1882, when the convention met in Indianapolis, Mr. Cooper came into my dark room to develop some negatives. He had some new fangled developer he was trying, and after he went away, some gentleman, I am not going to tell you who he was, said he was a crank. Subsequent events I think have proved that the other man was a crank. He had a soda developer. He was experimenting with it at that time. We will now have Mr. Cooper's paper, and the title of the paper is "Improvements in Photographic Printing and Enlarging." [See page 425.]

Mr. COOPER—*Mr. President, Ladies and Gentlemen:* I shall let my paper go now and give the process. There are numerous lines of work to which this permanent bromide process may be applied. It is simply the method by which we can easily obtain any range of tones etc., for application to chemical printing apparently, that is the reproduction of prints for the purpose of illustrating books and so on, line work, etc. These bromide prints are an excellent thing in giving a pure black and white. You will see, as you have all perhaps taken notice of, that it is certainly all that can be desired for enlargements. That I think is unquestioned. The manner of doing this work is of course the thing that is most important to the photographer, and is I really believe of great practical importance to him, and I have undertaken to take up your time this morning for the purpose of giving you some idea of how the thing may be done. One of the first necessities in doing anything is to provide yourself with the things to do it with. Now the permanent bromide, as I just now remarked, meets a variety of wants



required by the photographer for his customers, and this method of enlarging is really the most important for you to consider at present, and therefore I have prepared here a diagram which I had intended to show you by means of the magic lantern. I hope you will be able to see it sufficiently clearly to get a proper idea. Ordinarily very fine pictures indeed may be obtained by means of the light that you receive from outdoors; that is not direct sunlight, but nice diffused daylight, that you may be able to get from almost any north window on your gallery. But as a good many desire to work in the afternoons, or in the evenings after completing their other work, I have a diagram here which represents the method of employing artificial light, in the form of a kerosene printer.

I will call your attention first of all to the easel, which is the most necessary thing to begin with—in reality the most necessary thing—for it is necessary that you should have an easel upon which your paper is perfectly well stretched, so that your focus will be accurate.

Now we will consider the method of operation. We will suppose that you have here your camera, and there a dark room, or rather a room that is light-tight, in which you have placed your lamp, and in an aperture in the room at a proper focal distance from your condensing lenses you place two condensers. You put the condensers at the spot indicated. They are double plano-convex. Two plano-convex lenses as seen in the magic lantern. It is better to have lenses of sufficiently large size to enable you to use negatives which you have in your galleries. This lamp represented here is one of the best of the kind, such as is known as the electric burner, but it has been found to work very satisfactorily indeed. There is however another lamp which has been made for the purpose and which does not cost anything—not more than five dollars—but is far more perfect, having been designed expressly for this purpose. It gives a round blaze of light, a full blaze of light that is equal all over, an even illumination, and it is therefore far more satisfactory than any other style of printer, for the reason that there are no dark lights thrown by the shadows from between the flames, which we find in a number of magic lanterns that we have tried to use for this purpose. This is the camera and you will notice that the back of it looks very much like an ordinary camera, but on a closer inspection you will find the back of it has no place to put a plate holder, and instead there is a back support in the shape of ground glass when it is

used for the purpose of enlarging by ordinary daylight. In this case if you have condensers free from striæ and other things of that sort it is unnecessary to use ground glass. Here is a slot which draws out, with kits into which you button your negative, and which admits of your putting in any size of negative, from one quarter up to  $8 \times 10$ . So long as you are provided with condensing lenses and with capacity to illuminate any of those sizes of negatives, you can do so perfectly satisfactory with any size. Now I have described the camera and the light, and I will call your attention to a very important little fact, and one that you will find of great value to you when you come to apply it. Right here you will see hanging down at the end of a string several little frames in which a very lightly colored glass is placed. In the case of a weak negative without coloring matter it imparts a degree of intensity apparently to the negative, so that the negative appears to be very much stronger in result when you have made your print than it would have been if you had not put it there. In the case of a very intense and strong negative, a very light blue glass is placed in it, that has the effect of reducing the contrast very considerably. It is an interesting fact, one that, as I said before, is a matter that will be of great use to you when you come to see it—here, of course, are the lenses. And there is no possible way of making any enlargement without a lens, so I need not say anything on that subject. We are supposed now to have got our negative in place, and we are ready to make our picture. We focus on this board, and having secured a focus which is perfect you throw open that frame-work, and open this box, which is perfectly light-tight. Of course you will understand that all these operations are done in a dark room. This is supposed to be a light-tight box in which a lamp is placed, but not admitting any white light to the room excepting the lamp in focusing. After the focusing it is then shut, and you put your paper in, shut this and you have got your image thrown right on the paper immediately you uncup your lens.

Now then, I will call your attention to a fact which is perhaps a little singular, and it is hardly to be believed at first when I make the statement that it is really a very simple matter to obtain from a negative far better results, under certain conditions—far better results than are to be obtained from your negative by ordinary contact printing. I will show you here a print that is made from a negative which is very strong and very yellow, and I

will pass around for your inspection a print that has been made on albumen paper. That can be circulated around. It will show you what the negative is capable of doing on albumen paper. You will notice here that this while it is an ordinarily and fairly good print, it is still deficient in a great many particulars. The shadows seem unusually dark as compared with the high lights. All the detail is lost in the white drapery, but it is, on the whole, what connoisseurs would consider a very unsatisfactory thing.

Now while the negative is not capable of producing the finest picture possible, it is with that means that we adopt in solar printing capable of producing that [indicating], and when you place it side by side you will notice the difference. You will see that where there is no detail whatever in the drapery, here it is very well printed out. Now I will explain the method of doing it. I do this so that you can readily understand it. We will suppose that to be the image thrown on the paper on uncapping the lens. Now, if I give ten or fifteen seconds on that all over, and then develop it, that is the result indicated. I have no more success than that [indicating.] I have just this degree of contrast, no details in the whites, and, by comparison, too dense shadows, but if I give fifteen seconds over the whole thing I have then obtained a sufficient amount of exposure to get the head and the shadows comparatively right. Then I cap my lens, and taking a piece of card-board with an aperture in it which is just sufficient to permit the light to pass through and appear on any portion of the picture which I desire to have illuminated, I hold that in front, and I allow the light to pass through and fall on the spot desired, and I can go on printing for ten, fifteen or twenty seconds, as I may desire to do for the purpose of bringing out any portions which I think would be benefited thereby. You can apply it—any man with skill can use it—and it is used as an artist would use his brush instead of being governed by the rule of thumb; if you have a shadow, you can work on that shadow and give it a little more time, or touch it up in the high lights, and benefit it in any way that you desire, and handle it in that way with the possibility of producing a result which it would be really impossible to produce by any ordinary method of printing.

Now we will come to the matter of development. We will suppose that our print has been properly exposed.

*A Member*—What is the time of the average exposure?

Mr. COOPER—That depends very greatly of course upon the character of the negative, upon the condition of the light outside, upon the degree of sharpness you desire to get. If it is a portrait negative, in which you wish central rays, the instrument working very quickly, the probabilities are that from thirty to forty seconds would be quite sufficient in time.

Now, while speaking of that, I will take the opportunity to say, that for vignetting in the most satisfactory manner possible, you see the time being so comparatively short, you hold your vignette in that way [indicating], moving it back and forth, and obtain a degree of softness in vignetting that it is hardly possible to be got by any other manner of work.

Now, when you come to the development—and I am sorry to know that a great many people have been disappointed because we have not given any demonstration at all on the subject of development—St. Louis has got, as you know, the reputation of being a pretty hot place, and this room, you see, while it would have been a very comfortable place to develop in ordinarily, provided there was a sky-light there that could have been shut off, we could not possibly do it, because we could not get a sufficient number into one room without a great deal of discomfort to them and positive cruelty to the operator to show them anything at all satisfactory—the method of working is so simple that it really, to any man of ordinary intelligence, it really needs but a few points to be given to him to enable him to go to work very successfully indeed. After you have made your exposure you cap your lens, of course, get your paper off it, and then, opening the kit, you take out the paper, roll it up, then get your dish of a convenient size for development, and let a sufficient quantity of water into the dish. Lay your print face down and wet it up thoroughly. One point I want to call your attention to that is exceedingly necessary. You must have water enough in the dish when you place your print in so as to wet it up. If you have not sufficient, if you have part of the dish uncovered with water, your paper will stick to it, and I do not know any method on earth for removing that paper without tearing it. If you will be careful enough not to fill your dish, but to have sufficient to cover the bottom when you place your paper in, it will be quite safe, and will become sufficiently limp. Let the water pass backward and forward, so as to thoroughly wet those parts not acted upon. Then pour your water off carefully,



so as to let the paper settle down softly in the dish as flat as possible, so as not to get air bubbles under it. Then, after settling, pour on your developer, which is composed of these proportions of an oxalate developer made up in this form:

Oxalate of potash . . . 1 pound.

Hot water . . . . . 3 pounds (pints)

This is solution No. 1. Solution No. 2 is as follows:

Protosulphate of iron . . . . . 1 pound.

Hot water . . . . . 1 quart.

Now these are solutions you are pretty well acquainted with, but I call your attention to a method of acidifying which is a very important one. I omitted to tell you about the acidifying solution at the start, because I wanted to impress it more firmly on your mind. To acidify we use sulphuric or citric acid, which will change the color of litmus paper. It is not necessary to put in a large amount of acid, that is quite unnecessary. Another thing which is necessary, is, that your iron should also be acid. In this case you use sulphuric acid, or citric acid. In the case of citric acid you use a quarter of an ounce to the quantity quoted. In the case of sulphuric acid half a dram. To develop by these solutions you take of No. 1, six ounces, of No. 2, one ounce, and then of the bromide of potassium solution, which is composed of one ounce of water and one ounce of potassium, one quart of water—you take just half a dram of that added to the proper portion of No. 1.

Now then as I said before, taking a sufficient quantity to develop successfully without leaving some parts covered and others not, you flow it nicely over, as in the case of a dry plate, and the development will proceed just exactly as is the case with the dry plate, so that any man who possesses a knowledge of the working of dry plates successfully to-day, has just to carry out the practice in use with the dry plate, using the knowledge that he now possesses. All the difference there is this, instead of wetting the paper beforehand so as to have it lay perfectly flat in the dish, laying it so that it will curl up; the paper will act queerly under some circumstances, it will not do anything of the kind if you do it properly. Pour your developer on, and that is all there is about it.

Now then, here is another very important point. And this point I must impress upon your mind, and that is the manner of using the acetic acid solution after development. We have prescribed here for that purpose one

dram of acetic acid to one quart of water. Now many of you gentlemen should know acetic acid is not an extremely powerful acid, not in this form, and a member who understands its character will regard that as being an extremely dilute proportion—one dram to a quart of water, and very many parties who have tried it have thought that that was altogether too dilute, and that it was too much of a homœopathic dose. They thought that if a little was good more would be better, and they have made experiments in that direction, but I have never heard of any one who stated that he thought his results were any more satisfactory for that.

Now while it is quite possible to use acetic acid in a greater strength without doing very much harm in cold weather, it is rather risky business to attempt it too strong in hot weather, for it may have a tendency to create blisters. The object of using acetic acid is one that is very important. It is utterly impossible to obtain or retain pure whites without using it, so that any one who thinks it is possible to slight that operation, as being a matter of little importance, will find he has made a mistake, and in all probability will admit the fact when he is questioned about it. It seems to me to be an easy matter. Caution must be taken to use a sufficient quantity. It is not the strength of the acid so much as it is the repeated application turns three or four being placed on the paper, and care being taken to rinse it thoroughly before you attempt to put any water in it at all.

There is another point. Don't allow any water to touch the paper after development until you have placed the acetic acid on it. The reason for that is this: We have found it is almost impossible to wash out oxalate of iron from the texture of the paper unless it is acid. The degree of acidity seems to be a matter of little or no importance so long as it is not too great. That is one of the reasons why we use the acid, just so long as the paper is acid the water is kept acid, and the iron washes out completely, is entirely removed, and you get a good result in the pure whites which you are unable to get except you follow the directions. After development rinse with water, then, taking your paper very carefully up, transfer it to the hypo solution. It is well for you to keep your hypo solution just as separate from any other of your trays and dishes as possible, because it is extremely fatal to success to have the slightest trace of hypo either on your fingers or anywhere about your dishes, and you will find that a little caution and care on your part will amply



repay you. It is not at all satisfactory when you have a large print to find a black streak running down the edge. When you put your fingers to the top of the dish that is likely to occur if you have had hypo under your fingernails which you have neglected to wash after some previous operation. Now the prints fix very rapidly, but at the same time it is not wise to remove them from the hypo solution short of say two minutes to three minutes. Three minutes would be very much more satisfactory. Keep them there at least three minutes, then, taking them up after washing, transfer them to the bath of common salt and water. Say about a pound of salt to a gallon of water. Just that plain solution is all that is necessary, and that will prevent any tendency even in hot weather to the slightest trace of frilling. There will be no frill because there is no frill to it. The blistering is, unless there has been some carelessness in the method of operation, something that has courted the trouble. The prints then, after having been properly fixed and treated with the salt, are removed to the washing water. An hour's washing, or an hour and a half, or two hours according to the condition of the water; if it be running water you can wash much more rapidly. You should allow two hours for washing in water, changing ten or twelve times, laying them in trays. I suppose a great many gentlemen come from parts of the country where the supply of water is limited. It is necessary to call attention to the fact that two hours' washing is absolutely necessary when you have to use trays to soak them in. The larger number of prints in trays, the longer the time you have to take to carry out that operation.

Now we come to the matter of mounting. This is a very interesting operation.

It is somewhat different from that adopted for any other method of mounting. It took quite a little time and a number of experiments to determine the successful way of doing it. You know the gelatine surface is not like albumen, and while it is wet it is quite disastrous to attempt very powerful pressure, either with the hand, if it happens to be rough, or any other rough substance. It would never do to mount a print and then put a piece of paper on it and rub it down as you are used to rub down in other cases. Because when you did that and attempted to take away the paper, the chances would be that you would bring all the surface along with it. It was quite a little while before we discovered the best way to do it, and now we do it very successfully, and the

plan is a very easy one. Take your print, lay it on a piece of plate-glass, if you have a piece large enough for the purpose. If you have not, get a board of sufficient size, and nail over that a piece of canvas, or rather oil-cloth; I mean rubber-covered cloth, you know very well what that is, I suppose. Just take that all over so as to have as smooth a surface as possible, and use that for the base, and you take your print out of the water and lay it face down on this rubber-cloth after wetting the rubber. That is my practice. Remember to wet the rubber thoroughly, press on it with the squeegee. Drive all the water from above and below as much as you possibly can, and then proceed to paste with a suitable paste, such as you have been in the habit of using and know to be good. Suppose that you are going to mount on a muslin stretcher, in the way prints are mounted which are seen in the exhibition here. You can either lift your paper up and lay it down in the ordinary way, but if your picture has been well centered on the base a very simple manner is to paste the picture thoroughly as well as the print. You take the stretcher, lay it right down, place it right on the top of the print; after you have done that you can take a piece of cloth and rub the print. At least take the muslin and bring it into contact with the print, it will stick very perfectly. One thing you have got to be careful about, and that is not to rub too near to the frame. If you do, the tendency will be to make a strongly defined mark all around, which would mar the appearance of the print after it was dry. After you have rubbed down the center as well as you can, lift one end of the cloth. I said tack the cloth down, but it is not advisable to tack it all around. Tack it at two sides, then, catching hold of one end the moment you lift your print, the cloth comes up with it and falls and leaves the print—falls right down, and you take it off perfect. Lay it back side down, take the side of your hand and press the air bubbles out towards the edge, and the operation is complete.

In the case of mounting on card-board, you simply pursue exactly the same course you did in the case of pasting and so on, and you lift the print afterwards and center it on your card. In mounting, in the case of ordinary prints, then take a piece of rubber-cloth, lay it so [indicating], with a squeegee go backwards and forwards, and then that is in position. The point is this, that when you are going to handle gelatine prints of any kind, you want to avoid any dry surface in contact with them

while they are wet or in a moist condition; but when you wet your rubber and your mount is wet, they will come away without the slightest trouble at all. Now, if there are any questions I should be glad to answer them.

Mr. GREGG—The acid bath after the development, and the hypo bath, can they be used repeatedly?

Mr. COOPER—The acid bath cannot be used repeatedly, and should be thrown away as it is practically of no use, being of very little value comparatively, as nothing is saved by using it. The hypo bath, on the contrary, can be used repeatedly to a certain extent; that is for making fifteen or twenty prints a day, if you have a sufficiently large tray and quantity of solution. You can use it for fifteen or twenty prints during the day. Perhaps it would be advisable if you would have good prints, to use a fresh solution on each occasion for each batch. I refer to fifteen or twenty. In the case of a gentleman doing two prints a day, perhaps three or four a week, if he does that it is not necessary for him to throw away the hypo, but keep it separate from any other operation and don't use it in anything else after you have fixed your prints in it. Throw it back into the bottle and cork it up, and it will answer very well.

Mr. LONG—Do you print or develop your picture any darker than you wish it to be when finished?

Mr. COOPER—It is advisable you should develop just a trace darker. It is not necessary that it should be carried to any extreme extent, because the image is unlike that of the negative coating. The surface is so extremely thin, so little gelatine there, you do not have to look through a great deal of silver bromide that will deceive you. Develop just up to the point that seems to be dark enough.

The President suggests to me that as you have a great many things to do this morning and the time is limited, that we postpone the balance of these remarks until to-morrow's session, when it will come up under the head of unfinished business, so I shall not detain you any longer, and hope that I have not bored you with what I have already said.

The President—I have a few announcements to make. The excursion does not leave the wharf until two o'clock. We want to get through our business, then we want to go, if we possibly can, and visit the factories of Mr. Cramer.

Mr. CRAMER—Mr. President: In regard to that, I must say that everybody is welcome who wishes to visit my factory or my gallery.

I am only sorry that I cannot be everywhere myself, to attend to each and every one of you individually. If it is your pleasure to visit my factory, as this afternoon is devoted to the excursion and there will be no more time to-day, we can make it to-morrow afternoon, and all those willing to come out there will find me there and will be welcome.

A Member—Would you suggest a time?

The President—I should think that most of us could leave the hotel at half-past one, or probably two or half-past two o'clock, not later than three.

Mr. CRAMER—Three o'clock is soon enough.

The President—Say half-past two to three o'clock.

Mr. CRAMER—Allow me to make arrangements with the street cars, and be on hand at Twelfth and Pine streets at three o'clock.

A Member—When will the boat return from the excursion?

Mr. HULBERT—At half-past ten.

The paper of Mr. Stuart, of Hartford, Ct., subject, "A Tribute to Photography," was then read by the author. [See page 429.]

On motion of Dr. Elliott, a hearty vote of thanks was tendered Mr. Stuart for his excellent paper.

The President—According to Section 6 of the By-Laws, which reads, "The election of officers shall be held at the morning session on the day preceding the last day of the annual convention," the election will now be held.

As the Committee on Awards is now ready to report, before we go into the election we will receive the report of that committee.

The Secretary then read the report as follows:

Your Committee of Awards beg leave to submit the following report. After a careful consideration of the entire exhibit, they award the six gold medals to the following parties for the best

#### PORTRAIT WORK.

Decker & Wilbur.....Cleveland, O.  
E. J. Falk.....New York City  
J. W. Gehrig.....Chicago, Ill.  
J. Landy.....Cincinnati, O.  
J. A. H. Parsons.Wheeling, W. Va.  
J. F. Ryder.....Cleveland, O.

#### Silver Medals.

B. L. H. Dabbs.....Pittsburg, Pa.  
S. J. Dixon.....Toronto, Canada.  
G. W. Elton.....Palmyra, N. Y.  
Gilbert & Bacon...Philadelphia, Pa.  
H. McMichael.....Buffalo, N. Y.  
C. W. Motes.....Atlanta, Ga.



# PHOTOGRAPHIC PRODUCTIONS OTHER THAN PORTRAITS.

## Gold Medals.

Geo. Barker... Niagara Falls, N. Y.  
W. H. Jackson & Co. Denver, Colo.

## Silver Medals.

E. H. Lincoln... Dorchester, Mass.  
Geo. B. Wood.... Philadelphia, Pa.

## FOREIGN PORTRAIT EXHIBITS.

### Gold Medal.

F. Muller..... Munich, Germany.

### Silver Medal.

Schultz & Suck. .... Germany

## FOREIGN EXHIBITS OTHER THAN PORTRAITS.

### Gold Medal.

Geo. West & Sons..... England.

### Silver Medal.

R. Hamsa..... Germany.

F. W. GUERIN,  
JAS. MULLEN,  
J. D. CADWALLADER, \*

The grand exhibit by the leading St. Louis photographers is as conspicuous for merit as ever, and outside photographers cannot appreciate too highly the magnanimity extended by them in their withdrawal from competing for prizes.

The undersigned members of this committee regret it is not in their power to select from their exhibit, among which are to be found displays second to none.

JAS. MULLEN,  
J. D. CADWALLADER,  
*Of Committee on Awards.*

One of the silver medals of merit was voted by the Executive Committee to Mr. Burnham, of Boston, for a large picture, 36 x 60, of a lady. The other to the Eastman Company on bromide enlargements.

The medals having all been disposed of, the executive committee desire to tender Gileng, of Detroit, Mich., honorable mention for the excellence of his enameled photographs.

Mr. J. SMITH—*Mr. President and Gentlemen of the Association:* The medals are in this little box and are ready for distribution at once, unless it is the desire of the association that your committee shall engrave the names upon the medals of the lucky competitors.

I have here the names of the following gentlemen who have kindly contributed to this fund. [The names have already been published in the BULLETIN.]

The total of the contributions was \$1,300.

## EXPENSES.

Paid to Giles Brothers & Co., for medals.....	\$1,214 00
Paid to Rand, McNally & Co.....	43 60
Paid for discounts, postage stamps, etc.....	1 75
	<hr/>
	\$1,259 35
Balance on hand.....	40 65
	<hr/>
	\$1,300 00

JOSHUA SMITH,  
*Committee on Medals.*

Mr. CLARKE—We would like to have the names of the rest of the committee.

The *President*—I can make a statement that Mr. Smith was made a Committee of one on Subscriptions to Procure Medals, and he was made entirely responsible in the matter of procuring the medals. There was a committee of three appointed—Messrs. Joshua Smith, James Landy and F. W. Guerin.

Mr. GENTILÉ—I move that the report of the committee be received and the committee discharged with a vote of thanks.

Agreed to.

The *President*—The next business in order will be the election of officers for next year.

Mr. J. SMITH—If nominations are in order, Mr. President, and Ladies and Gentlemen of this convention, I would place before you the name of a man you all know, and whom you all respect, a gentleman who needs no recommendation from me—Mr. G. Cramer, of St. Louis.

This was seconded by several.

Mr. CLARKE—While Mr. Cramer is one of the best friends to the association and to all photographers, I arise on behalf of the photographers, not simply as in opposition to Mr. Cramer, for no better man lives in the association; but it has been suggested, and I have been requested by a member to make these remarks: that as Mr. Cramer is a manufacturer of dry plates, it would be an injustice to him to put him into the presidency of the association. I merely say this, not that he would not do justice to the association or its members, but it will create a jealousy with other manufacturers, although it would be no detriment to the future of the association. I have been asked to make these remarks on behalf of a very large number of members of this association. The feeling seems to be that the officers should be from members, working



photographers, not manufacturers, dealers, or journalists.

The *President*—The nominations reported by the Nominating Committee are: H. McMichael, of Buffalo, for President; F. W. Guerin, of St. Louis, for Secretary; G. M. Carlisle, of Providence, for Treasurer. Executive Committee, James Landy and W. H. Potter. Location for the coming convention, Chicago, Ill.

Mr. GENTILÉ—With regard to the remarks that have been recently made about Mr. Cramer being a dry plate manufacturer, those reasons do not hold good, for we have had Mr. Carbutt for a president, and he was a dry plate maker and had no gallery, while Mr. Cramer is one of the best photographers, having a working gallery in this city, therefore he is thoroughly acquainted with the business in every respect, as well as being thoroughly qualified to become our president; no better man could be chosen. The very best feeling exists towards Mr. Cramer, and, if he is elected, I am satisfied there will not be one dry plate maker who will be jealous of his position, and I think there are two or three parties, if not more, manufacturers of dry plates, who will be much pleased to see Mr. Cramer elevated to the position. We want new blood in this association, and it should be the aim of this body to see if we can't pick out a man capable of taking care of our affairs, and we should not be obliged to ask the same man to come back two or three times to serve us. I believe in one term of service, with the exception of one man, who has given us a guarantee of the faithful performance of his duty, and that is the Treasurer. Consequently I think that we ought to take out from our number for our next president a man whom we know has our interests at heart. No man can be found more suitable to carry on that office. No better man can be found than Mr. Cramer. He is thoroughly interested in the workings of this association; he has done more for it than any other man; and at the next convention it will require a strong man at the head of this association to make it as successful as this has been. We ought to elect a man whom we know will make it a success. I hope that you will not be influenced by the remarks which have been made about the jealousy of the dry plate manufacturers. It will probably amount to nothing. Mr. Cramer has shown that he has not used his office in a way to further advertising schemes on his own part. We have his acts before us, every man knows them. We know if he gets that office he will

not use it for any personal benefit, I am satisfied that we will all be proud of him at the end of his term of office, we can rest assured. Therefore I hope you will all vote for Mr. Cramer.

Mr. CLARKE—I did not arise in opposition to Mr. Cramer, that is a mistake. No better man, as I said before, exists, and no person would be more pleased to see him elevated to any office in the interests of the association than myself. It was not in opposition to Mr. Cramer that I arose to make the remarks which I did, but it was in the interest of those who have spoken to me, a large number, who have had no personal feelings against Mr. Cramer or any one else.

The *President*—Are there any other nominations? If not, a motion will be in order to close the nominations.

On motion the nominations were closed.

The *President*—I will appoint as tellers Mr. Tucker, of Worcester, Mass.; Mr. Chas. H. Smith, of Peoria, Ill.; Mr. Harrison, of Galesburg, Ill.; Mr. J. C. Herring, of Massillon, O.

The vote was then collected and the following was the report of the tellers: H. McMichael, 32; G. Cramer, 147.

The *President*—Mr. G. Cramer having received a majority of the votes is declared elected President of the Association.

On motion of Mr. Clarke, of St. Louis, the election of Mr. Cramer was made unanimous.

The *President*—I will appoint Messrs. Smith and Gentilé to conduct Mr. Cramer to the chair.

The next business in order is the election of Secretary.

Mr. CLARKE—I will put in nomination for Secretary a young man, a member of this association whom I think is perfectly competent to fill the position honorably and justly. I nominate H. W. Bellsmith.

This nomination was seconded by several.

Dr. ELLIOTT—I nominate H. McMichael, of Buffalo.

Mr. McMICHAEL—I decline the nomination.

The *President*—Mr. McMichael declines.

On motion the nominations for Secretary were closed.

Mr. RANGER—There being only one candidate for Secretary, I move that the Secretary cast the unanimous vote of this association for Mr. Bellsmith for Secretary.

Agreed to.

The vote was accordingly cast and Mr. Bell-

smith was declared unanimously elected as Secretary of the Association.

Mr. RANGER—There being but one candidate nominated for Treasurer, Mr. G. M. Carlisle, of Providence, I move that the nominations close and that the Secretary cast the vote of this association for Mr. G. M. Carlisle as Treasurer for the ensuing year.

Agreed to.

The President—The next business in order is the election of the Executive Committee. The only one nominated is James Landy, W. H. Potter having resigned.

Mr. W. V. RANGER was then nominated a member of the Executive Committee.

On motion the nominations were closed.

On motion the Secretary was instructed to cast the vote of this association for Jas. Landy and W. V. Ranger as Executive Committee of this Association for the ensuing year. The Secretary then cast the vote of the association as instructed.

The President—I declare James Landy and W. V. Ranger duly elected members of the Executive Committee for the ensuing year. The next business is the election of Vice-Presidents.

(To be continued.)

## What Our Friends Would Like to Know.

N.B.—*We cannot undertake to answer communications of a technical character except through the columns of the BULLETIN. Correspondents will please remember.*

Q.—W. B. C. writes:—What kind of paper is used to make blue prints, and how is it prepared? What is the formula for toning and fixing it? Can you tell me how to tone photographs to get a rich purple color after fixing; that is, a toning bath that will not change the color in the hypo bath? Can chloride of gold made with nitric and muriatic acids be neutralized with phosphate of soda and give good results? What is the best brand of paper to use for first-class work?

A.—We do not know the kind of paper used to make blue prints. The surface is coated with a mixture of citrate of iron and ammonia with red prussiate of potash; the proportions vary. It requires no toning or fixing, and is developed by simply washing in water. Our advice is to buy the paper ready prepared from the publishers of the BULLETIN;

it is much too troublesome to make it yourself to insure good results. Hugh O'Neill's formula for printing and toning given in last year's BULLETIN (No. 3, page 79) is the best we know. Phosphate of soda alone will not neutralize gold chloride and give a good toning bath, bicarbonate of soda must be used also. The brand of paper mostly used now by first-class photographers is N. P. A. Pensé.

Q.—W. G. H. writes:—I have a sensitizing bath with nitrate of silver 50 grains and citric acid 20 grains to the ounce. How can I neutralize the acid and get a pure silver bath? I find in running mounted photographs through an Entrekin burnisher that the roll removes the enamel from the back of the cards, is there any remedy?

A.—We think you will do best if you precipitate that silver bath, and make up a new one; we know of no good way to readily get rid of the citric acid. Your trouble with the burnisher can probably be overcome by rubbing the backs of the cards with Castile soap before running through.

Q.—L. P. writes:—Would you favor me with some examples of good work made in different parts of the country, cabinets or smaller?

[Will some of our friends send us a few examples of their work that we may send them to the above subscriber?—EDS. OF BULLETIN.]

Q.—H. C. writes:—Please inform me, through the BULLETIN, whether albumen paper should be kept in a dry or damp place?

A.—Keep it in a dry place until about twenty-four hours before you want to use it; then it can be placed in a damp room with advantage in the matter of printing, etc.

Q.—C. J. B. writes:—I wish to know what proportion of bichromate to a pound of glue would be required to make a water-proof whitewash?

A.—This is scarcely a photographic query, but we will answer it. Use about four drams of bichromate of potassium to one pound of glue.

Q.—C. H. H. writes:—I would like to know what makes the yellow stains on the finished pictures; they come after the toning bath and before putting into the hypo. Could it be that I don't warm the bath?

A.—The yellow stains may come from iron in the water or toning bath; we can tell better if we see a print. It is not necessary to heat the toning bath in warm weather; it tones quite rapidly these warm days.

## Views Caught with the Drop Shutter.

WE regret to announce the death of G. WALDO BISHOP, the son of Mr. Bishop, the well-known photographer of New London, Conn. The cause of this sad event was the accidental discharge of a revolver in the store of a gunsmith at New London. The bullet struck young Bishop in the forehead and he was never conscious of what struck him. He was a most estimable young man, beloved by all who knew him, and gave promise of being of much more than average intelligence.

RICHARD WALZL, of Baltimore, is making some very handsome improvements in his premises. A beautiful white marble building is now being erected at the corner of Eutan and Franklin streets, Baltimore.

WOODWARD CLARKE & Co., of Portland, Oregon, send us a very handsome catalogue of their stock of photographic supplies. It is well illustrated, and is filled with descriptions of the best apparatus now made, which includes a large variety of the products of the factories of our publishers.

WE note the appearance of another new photographic journal, *The Camera*, of London, England, edited by T. C. Hepworth.

SINGHI, the fotografer, of Farmington, Conn., has disposed of his studio to FARINI, lately with E. C. Betts. Singhi met with an accident a year or so ago, and has been suffering from the effects of it. He has determined to try a rest to help him to recover his health.

W. D. GATCHEL, of Louisville, Ky., sends us a handsome catalogue of 160 pages octavo. It is finely illustrated, and contains every requisite for photography.

ABBOTT & SON, of Albany, N. Y., have bought the W. H. Hazer studio at Johnstown, N. Y.

W. V. RANGER, of Syracuse, N. Y., has sold his studio to W. H. Hazer formerly of Johnstown, N. Y.

CHARLES S. RABINEAU, of Albany, N. Y., has fitted up a handsome new studio.

MR. FRED. MULLETT, of Mallett Bros., the large Kansas City stock dealer, gave us a pleasant call recently en route for Nantucket, Mass.

J. S. LOPEZ, of Havana, lately paid us a visit, and entertained us very much with interesting Cuban news.

J. A. W. PITMAN, of Springfield, Ill., sends us a handsome picture of the photographers as they appeared on the steamer at St. Louis. It is made on a 10x12 plate and very good.

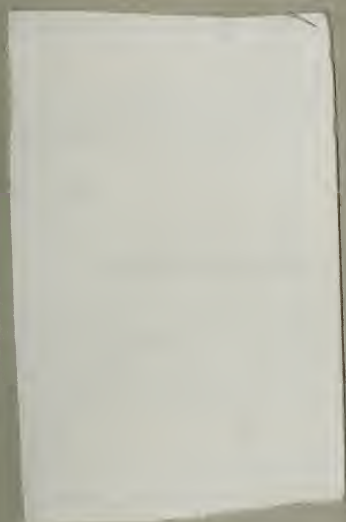
E. N. HILLS, of Pittston, Pa., now has the J. W. Miller studio of that place.

S. T. BLESSING will remove his stock from Galveston, Texas, to Dallas in the same State, which is a more central position for his patrons.

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*Oliver*

NEW YORK.



## Stage Celebrities.

PHOTOGRAPHED BY

*Oliver*

PRINTED ON N. P. A. EXTRA BRILLIANT  
PENSE ALBUMEN PAPER.

# ANTHONY'S Photographic Bulletin.

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Prof. CHARLES F. CHANDLER, Ph.D., LL.D., *Editor*.

ARTHUR H. ELLIOTT, Ph.D., F.C.S., *Associate Editor*.

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AUGUST 14, 1886.

Vol. XVII.—No. 15.

## PRINTING NEGATIVES FROM NEGATIVES.

SOME time ago several of our correspondents asked us questions about making a negative from a negative in the printing frame. We canvassed the subject among a good many practical photographic workers, and opinions were very much divided, some asserting that it could be done, while others said the whole idea was absurd.

The question of the nature of the photographic image has always interested us, and this problem of making negatives from negatives again set us thinking upon the subject. During some of our photographic experiments we have made an observation that more than ever convinces us that the production of a negative from a negative is not only probable, but capable of being demonstrated. But before we say anything more upon this point, we desire to call the attention of our readers to a number of observations upon this interesting question made by others. In an article in the *British Journal of Photography*, Mr. W. H. Harrison has collated a number of statements upon the subject from the writings of Captain Abney, Dr. Janssen, Mr. Hastings, and Sir John Herschel. As long ago as 1840, the latter experimentalist noted the reversal of the photographic image. He exposed paper, sensitized with the iodides of lead and silver, to sunlight until the paper was dark; then washed with iodide of potassium, and again exposed to sunlight, when the paper became white. Captain Abney explains this phenomenon by saying that the paper was acid, or free nitric acid was generated by the action of light upon the iodide and free silver nitrate, and that this nitric acid oxidized the reduced silver salts and made the paper white. In proof of this he states that plates treated with reducing agents, such as pyrogallol or nitrite of potassium, give a reversed image with difficulty.

Experimenting with gelatino-bromide plates, Captain Abney says that there are four phenomena to be observed in the action of light upon the sensitive surface. A short exposure gives a negative with the ordinary developer; after one minute's exposure a positive will result; longer exposure gives a negative; and, finally, still longer exposure gives a positive. In this case also he states that nitrite of potassium prevents these changes, or retards them until the nitrite is oxidized at the expense of the gelatine; in collodion films without preservatives, these changes of image are not obtained.

The experiments of Dr. Janssen when photographing the sun, also show that several reversals of the photographic image are possible. He obtained an ordinary negative, an obscured image, a positive image, a clear plate, another nega-



tive, and a uniformly dark tint; these being increasing amounts of time in exposure and ordinary development. The plates were gelatino-bromide or tannin.

Mr. Hastings, before the London and Provincial Photographic Society, recently called attention to some of his experiments on reversals. With a snap shutter he obtained an image from a negative; with one minute's exposure he got a good negative from a negative; while with longer exposure he obtained less intense negatives, until finally scarcely any image was obtained.

Now before we had seen these statements of the work of others, we had made an experiment ourselves, which we refer to above. Taking a very rapid plate (Stanley Lightning) we exposed it to bright sunlight without a negative for about half an hour. It was then taken into the dark room and treated like a plate which had been exposed in the camera to obtain an ordinary negative. It was treated with Cooper's Developer, and every care was taken to obtain a development, the time that the plate was in the pyro and sodium carbonate being twenty to twenty-five minutes. After washing it was placed in a strong alum solution which was acid with sulphuric acid, then washed again, and finally placed in hypo solution to fix it. On coming out of the hypo we were surprised to find that the plate was only fogged and no appearance of blackening was to be seen upon the surface. Plates from the same emulsion when properly exposed gave very dense negatives quite readily.

Now it has been known for a long time that over-exposure will give a thin negative, and when we made the above experiment, the idea was to answer the question: "If over-exposure gives thin images, will excessive exposure make the formation of an image impossible?" The above-mentioned experiment appears to answer that it will. The bearing of this, as well as the experiments of others that we have mentioned above, upon the question of making negatives from negatives is evident. By excessive exposure the sensitive silver compounds are rendered inert to the developer. Those parts of a plate that are protected by the dark parts of the negative allow enough light to penetrate to give another negative, while the less protected parts let so much light through that the silver salts are rendered inactive to development. That the densest parts of any negative are somewhat transparent is evident to the most careless observer, if he holds such a negative up to the light and looks through it. Therefore it appears to us that the formation of negatives from negatives is due to excessive over-exposure through the more or less clear parts of the original negative, and a partial filtration of the actinic rays through the denser parts which is sufficient to produce an effect upon the sensitive surface. From the experiments of Schumann upon metallic mirrors, it appears that the metals absorb the ultra-violet rays of the spectrum, and it is well known that the common amalgam looking-glass only reflects sixty-five per cent. of the light that falls upon it. According to this, the metallic silver upon the negative must absorb the more actinic rays, and only transmits those of less photographic activity. If this is true, plates of great sensitiveness should most readily give negatives from negatives, since they are active through a greater range of the spectrum. From what we can learn this appears to be true, the most rapid plates giving the phenomenon under discussion more readily than those of low sensitiveness.

This whole question is extremely interesting, in that it leads us to think about the true character of the photographic image. That excessive exposure makes the silver compounds inert to the developer, appears to us to be entirely antago-

nistic to the sub-silver salt theory so ably defended by Abney. If we have silver sub-bromide formed in a normal exposure, what happens to it during excessive exposure? It appears to us that if short exposures give a little subsalt of silver, longer exposure should give more, and the treatment with the developer should give a dense black deposit of metallic silver. The facts we have mentioned above are entirely opposed to this idea. We must look still further for the explanation of the action of light upon silver compounds, and the answer will probably be found in researches made upon the effect of light upon the physical form of the silver compounds, rather than in chemical decomposition. An example of the effect of heat upon physical structure we already have in the case of mercuric iodide. This body, when made by precipitating corrosive sublimate with potassium iodide, is a red powder; by applying heat to this powder in a dry state its color is changed to yellow; and, what is still more curious, the friction of any hard substance, such as a glass rod, upon this yellow powder spread upon any surface restores the red color of the original. Here is a purely physical change in the character of the mercuric iodide, and the effect of light upon the sensitive silver salts is probably analogous, making them susceptible of reduction under the influence of developers.

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#### EDITORIAL NOTES.

FARINI, who recently took the studio of Singhi at Bridgeport, has distinguished himself by his adventures in Africa. In a recent book upon the Kalahari Desert, we have read of some remarkable exploits of his with the camera. At Kimberley, the great diamond district, Farini undertook to photograph a blast, and had his camera stand broken by the falling *debris*. On another occasion several lions undertook to devour a giraffe that one of the party had killed, and Farini coolly set up his camera and set about taking a picture of the group of lions. The observer says he saw him "working as coolly as if in a studio, actually changing a shield; he had evidently taken one picture and was going to get another. At this moment some of the members of the party fired into the group of lions and suddenly the old lion charged at Farini. The latter kept the black cloth over his head and rushed toward the lion shaking the tripod legs at the maddened animal. Suddenly the lion stops, lashes his side with his tail, and with one bound turns tail." Who says that photographers are not brave; this exploit is unparalleled in the history of the art—the pictures taken in the battlefield are nothing to it.

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WE regret to note that Mr. J. B. Dancer, the well known maker of microscopes in England, is in the seventy-fourth year of his age and in straitened circumstances. He is the inventor of a stereoscopic camera, also methods of making microscopic photographs, as well as improvements in magic lanterns and the induction coil; but, like most inventors, he was a poor man of business, and while the world reaped the benefits of his ingenuity, he remained poor himself. It appears to us that this is a case where a man's ability should be recognized in some substantial way.

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IN spectrum analysis the ultra-violet cadmium lines have served as a starting point for measuring other spectra. Mr. Louis Bell has used photography to determine, more accurately than by Cornu's process, the precise wave-lengths of

this convenient spectrum, using for the purpose the Stanley plates. Mr. Bell believes he has determined the exact position of the bright lines visible to within one fifty-thousandth of their value. The total number of lines photographed is thirty, and they have been compared with those of the same wave-lengths obtained by Hartley, of England, and Cornu, of France.

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WE have several interesting communications from Victor Schumann, Dr. Mallmann, and Ch. Scolik, but the crowded condition of our pages, due to the mass of material from the St. Louis Convention, compels us to leave them over till future issues of the BULLETIN.

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MR. STANLEY has recently completed the fitting up of a very ingenious machine for making the separators for his dry plates. These separators are now cut from pure pulp that has not been treated with chemicals, and it is claimed that they cannot mark the plates. Plates packed with the new separators can now be obtained from our publishers.

---

SPEAKING of dry plates, we are reminded that our European cousins are now going through an epidemic of bad plates. In England, complaints are being received by the photographic journals that plates are so badly cut that they will not fit the plate holders. While M. Rutot, the Secrétaire Général de l'Association Belge de Photographie, has issued a long notice to the plate makers, complaining of badly cut plates and too thick glass in the small sizes. We, on this side of the water, are apparently through the difficulty, as we now seldom hear of badly cut plates. Occasionally we meet with a plate too large or too thick, which makes us still believe that "Eternal vigilance is the price of" good dry plates.

---

WE received a note recently from Mr. M. Moulthrop, of New Haven, which is very interesting to us. He tells us that he is 81 years old and has given up practical photography, although still interested in the BULLETIN, for which he sends the most kindly greetings and wishes for its success. A life of this length must have been worth living, to retain its interest in the art so long, and it must be pleasant to recall the memories of the early workers, Daguerre, Draper, Morse and the others.

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As we go to press we receive a notice of the exhibition of the Photographic Society of Great Britain, to be held in the gallery of the Royal Society of Painters in Water Colors, 5A Pall Mall East, London, from October 2d to November 13th next. In the next issue of the BULLETIN we shall give an account of the arrangements made for exhibitors.

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THE American Association for the Advancement of Science meets in Buffalo, N. Y., on August 18th, and a large attendance of scientific workers is expected.

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WE are indebted to C. GENTILÉ, the editor of the *Eye*, for his kind invitation to participate in the grand excursion under the auspices of the Photographic Society of Chicago, held August 3d. We are sorry that time and space prevented us from enjoying what we are sure must have been a most delightful trip.



## PICTURES EXHIBITED IN NEW YORK.

NEW YORK, July 29, 1886.

*To the Editors of the BULLETIN.*

It was not my good fortune to attend the Photographic Convention at St. Louis in June last, but I did the next best thing, and that is to accept the invitation published in the last two numbers of the BULLETIN, to examine the pictures now on exhibition at the store of E. & H. T. Anthony & Co., 591 Broadway.

I think I can truthfully say, that in all my forty years' practice of photography in the greatest metropolis of this country, I have never seen photographic work come so near my ideal of perfection as the portraits of F. Müller, Munich, Germany.

In this collection there is a large portrait of a lady, which, in my judgment, is past criticism. It shows the exquisite skill of an artist in the posing and lighting, and the perfection of the chemist in giving every light and shadow their due intensity. The contrasts in all its parts are evenly balanced, avoiding that brilliancy that borders on hardness, and that softness that approaches to weakness. It is a study equally for the artist and the chemical manipulator, and should therefore be on permanent exhibition in the rooms of the Photographic Section of the American Institute until it could be displaced by something better, and when that time came, the author of this gem of photographic art would, no doubt, eclipse himself by putting another in its place. There are also in this collection of thirty portraits (all of which are far above mediocrity), four character heads of old men that surpass anything of the kind I have ever seen in photographic work; and I think no photographer who has the slightest appreciation of his profession would regret taking a long day's journey to see these models of perfection in the art. And not only these, but landscapes and water-scapes that as yet have never been excelled.

I trust this collection of pictures will be kept on exhibition for some time to come, as there are hundreds of out-of-town photographers who will no doubt avail themselves of the first opportunity to examine and study these latest and best works of this photographic age.

And now allow me to thank you, in behalf of the fraternity, for the time and labor you have expended in making it possible for myself and brothers of the craft, without money and without price, to thus ennoble our ideas of the photographic art, and to learn its wonderful capabilities, while, at the same time, it may serve to check our undue egotism, and tell us in noiseless cadence that we have not yet reached the highest summit of the mountain.

Yours truly,

J. B. GARDNER.

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 LETTER FROM BERLIN.

BY DR. H. W. VOGEL.

*Amateurs' Instantaneous Pictures and the Photographic Bicycle—Landscape Photography and the Color-Sensitive Plate—Obernetter Plates with Fluoride of Silver—Obernetter's Photogravure—Loescher's Van Dyck Portraits—Kruse's Plate Numerator.*

WE are in the height of summer, and with increasing heat the number of amateurs also increases. At all places they appear, but most conspicuously were they seen at the great artists' Greek festival, held a week ago in celebration of

the grand artists' exhibition. About twelve professional and just as many amateur photographers were busily engaged doing their best, and from all sides photographic shots were aimed at you, and, notwithstanding the advanced hour (7 P.M.), some instantaneous pictures were successfully taken. The pictures taken with an ordinary aplanatic or rapid rectilinear lens are mostly somewhat under-exposed, whereas those taken with a portrait lens were a complete success. This again demonstrates that with unfavorable light it is best to make small pictures with a Dallmeyer or Voigtlander portrait lens, full opening, and to enlarge them afterwards. If the negatives are fully sharp, enlargements can be obtained with dry plates, showing hardly any difference from the direct picture.

For some time past the velocipede or tricycle has been used in England by outdoor photographers. In Germany they seem to have more interest for the bicycle, and the most practical construction of that kind is made by Weber, of Leipzig. He writes about the same:

"The ordinary tripod is replaced by the bicycle. This is done, when ready for use, by turning the front wheel as much to one side as possible, while the whole machine is slightly inclined in that direction, in which position the same is held by a telescopic tubular support. This support prevents the upsetting of the bicycle.

"After the camera has been fastened with a suitable clamp the photographic apparatus is ready, and the focusing can be done, which is greatly facilitated by the globular hinge attached to the clamp.\* After the view has been taken, camera and clamp are again packed in the carrying case, while the tubular support is put together and fastened outside of same.

"The size of the bicycle apparatus is 9 x 12 cm. This is sufficient for most purposes. The apparatus consists of a polished ash camera with folding bed and changing box for ten plates. The camera can be used horizontally or vertically. To this is added a metal clamp, with screw and globular hinge, by which the apparatus can be given any desired direction; also telescopic support with strap and buckles; an achromatic landscape lens and a small carrying case, with strap. The low price of the apparatus is remarkable, being only 65 marks."

How zealous some of our amateurs are, is best shown by a good many now successfully cultivating the carbon and platinotype printing processes; yes, even go in for color-sensitive plates. These obtain a certain prominence now their sensitiveness has been considerably increased. It is a fact that the plates produced by bathing in azalin solution are five times as sensitive as those colored in the emulsion. These latter are cleaner, because small particles of gelatine will always peel off from the film side of the plate during bathing and settle on the back. To remove this evil I have successfully and advantageously used alcohol in the bath, which has less solvent action and rather tans the gelatine particles adhering to the plate. For an azalin bath I take 70 c.c. water, 30 c.c. alcohol (96 degrees), 4 c.c. azaline, and 1 c.c. ammonia. In this bath I immerse a gelatine plate for one minute and then dry it. Formerly I frequently obtained streaky plates in the bath, but I have removed this difficulty since the production of chemically pure azalin. The development of such plates is a little slow, the alcohol tanning the gelatine film somewhat, but an alcoholic bath has the advantage that the plates dry much quicker.

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\* Both these devices were illustrated in the BULLETIN some time ago, as manufactured by our publishers.—  
EDS. OF BULLETIN.

The first one who successfully took landscapes with such color-sensitive plates was undoubtedly Obernetter, although little attention was paid to his first attempts. Lately he has made comparative views with ordinary and with color-sensitive plates, which elicited considerable surprise in the Verein zur Förderung der Photographie. Only by this comparison could the vast difference between ordinary and color-sensitive plates be successfully demonstrated. In a view of the summer resort Tölz, in Upper Bavaria, with mountains in the distance, the ordinary plate was exposed for one minute (6 A.M.), the other two minutes through a yellow glass. The result is actually surprising. So far azalin pictures of oil paintings had only been seen, and such enormous difference as is here shown between ordinary and color-sensitive plates was considered impossible. The distant parts appear upon the ordinary plate totally fogged; but on the color-sensitive plate, where the blue of the sky was made harmless by the yellow glass, they are completely clear. The trees in the foreground appear upon the color-sensitive plate in a fine delineation, not to be thought of in the other plate; even the distant background is sharp. Upon the ordinary plate the sky is entirely white; the color-sensitive plate shows clouds and tones.

The yellow glass is produced by Mr. Obernetter by placing between two polished plate glasses a coating of colored Canada balsam. To prevent any obstruction or defects in the sharpness, these plates are cut exactly parallel at the optical establishment of Mr. Steinheil. The sharpness has not suffered in the least, the objects upon the plate being as perfect after an enlargement of twelve times. Mr. Obernetter has the idea that all landscape views with color-sensitive plates should be made anew, and the negatives I have seen seem to confirm this completely.

Of particular interest also are the experiments made by Mr. Obernetter in the application of fluoride of silver upon color-sensitive plates. This salt (properly fluoride of silver and ammonia) is produced by dissolving 50 grams nitrate of silver in 150 c.c. water, precipitating the same with saturated soda solution, and washing with distilled water by decanting. Thus yellow carbonate of silver will form. In a beaker glass lined with hot wax, 25 c.c. of fuming hydrofluoric acid diluted with 100 c.c. of water are poured, and the moist carbonate of silver is slowly added under stirring. It develops energetically, and separates as a white flaky deposit. After the reaction is finished, 50 c.c. caustic ammonia are added carefully under constant stirring. The liquid becomes hot very easily. The muddy solution is filtered into a shallow dish, and over-night the salt will crystallize in needles. By recrystallization very handsome crystals can be obtained. It dissolves completely clear, but only slightly in distilled water. It appears to be insoluble in alcohol, but was slowly soluble in 100 parts of water. With muriatic acid the solution gave a precipitate of chloride of silver and discolored iodide of starch instantly. It is therefore undoubtedly a chemical sensitizer. Pyrogallie acid reduces the solution even when acidified, and precipitates metallic silver. It seems to be the only silver haloid salt which is reduced by pyrogallie acid, but this reduction is effected considerably slower than with nitrate of silver.

Obernetter dissolves this salt in 200 parts of water, bathes the plates for one minute, and rinses them with distilled water. He then puts them into a mixture of erythrosin with azalin for one minute. This is made according to the following formula.



Erythrosin solution in alcohol (1 to 1,000).....	25 c.c.
Azalin.....	2 "
Carbonate of ammonia.....	50 grams.
Distilled water .....	1,000 c.c.

The fluoride of silver here plays quite an interesting part; its behavior is similar to that of nitrate of silver, forming with erythrosin a red salt in which erythrosin is the acid. This is considerably more yellow-sensitive than erythrosin alone.

Obernetter also deserves great credit for his photogravure process. It has given general satisfaction here, and particularly in artistic circles. Meder, the well-known dealer in artists' materials, exhibited some Obernetter photo-engravings lately in comparison with some of the celebrated Goupil engravings from Paris. It was shown that the Goupil photo-engravings, notwithstanding their excellency, could not reach those of Obernetter's. The latter have two great advantages. The plates can be produced much easier, and they are not so expensive, Goupil requiring four to six weeks, while Obernetter can furnish the same within a few days. Herr Roloff received some plates three days after his order had been given. Obernetter's price is 150 marks, that of the Photographische Gesellschaft 500 marks, and Goupil's price is still higher. The latter charges for the square cm. 1 franc; aquatints, 40 centimes; while Obernetter charges only 25 pfennigs. I lately obtained from Obernetter a photo-engraving representing a fiddler. This portrait is executed in a style called the Van Dyck, whose principal characteristic is a very dark background, all the other surroundings being held in a subdued tone, so that the head appears very advantageously in brilliant light. The artistic effect is obtained by a narrow light, not much larger than the one generally found in artist's studios.

The Photographers' Convention at St. Louis will have an opportunity of seeing these pictures in large size, and to value their artistic superiority. They excite a great interest here, as upon the field of portrait photography really good novelties are seldom met with.

Finally, I would like to draw attention to another practical novelty. This is Kruse's patented plate numerator. The instrument is intended to supply exposed plates with running number and date, by exposing the edges in the dark room. It consists of a case in which strips of sheet copper pass over a pair of rollers, similar to the paper in a roll holder. These strips contain the names of the twelve months, date, and the running number. The strips are placed in the correct position and then the exposed plate, of course in the dark room, is placed into an angular groove, whereupon the light will fall upon the plate through the perforated copper strips, producing in this way the lettering, which can be developed afterwards.

BERLIN, June 30, 1886.

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[From our Special Correspondent.]

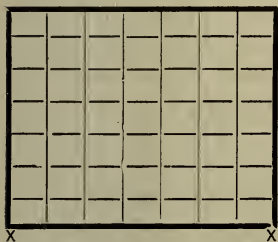
#### ENGLISH NOTES.

I CONSIDER our Postal Photographic Society one of the most useful aids conceivable to progress in photography. The number of members is limited to one hundred, and each member must contribute at least six prints annually. These prints are mounted in albums, which, with the accompanying note-books for criticisms, etc., pass from member to member by the parcels post, or by any

other cheap mode of conveyance. The society includes many of our best amateurs, as Bankart, Pringle, Leventhorpe, etc., and also some who have barely passed the tyro stage.

The following remarks, extracted from one or two of the society's note-books, will give some idea of the useful information so pleasantly furnished.

*"To cut prints perfectly square with perpendicular lines of buildings, horizon of sea, etc.*—Obtain a piece of plate-glass perfectly square, and true at the edges. Let the glazier rule on one side a number of faint lines across and across. Lay the glass with the ruled side down, and the print underneath it. The lines show across the print and it can be adjusted till the ruled lines coincide with the perpendicular or horizon lines of the picture. Then make two pricks through the print with the point of the knife at the places marked x x. Remove the print and place it face down on the smooth surface of the glass, and with a metal square or guide, cut across the base line at the pricks. This base will be perfectly true with the perpendiculars of the picture, and you have only to use the square to the sides and top to get the print perfectly true all ways."



"The best mountant is starch, made very thick and preserved by a few drops of carbolic acid."

"With a cloudless azure sky, and intense brilliancy where direct sunlight strikes, extra exposure is undoubtedly called for. Given one subject of an average landscape type, and two qualities of light, one even and diffused, the other brilliant and partial, I should expose for the latter much longer than the former—possibly in the proportion of two to one. Again, with such intense light the pyro, or iron, should be very sparingly used, in order to avoid chalkiness." These remarks were called forth by a series of pictures taken in the blazing light of Cuba, which were nearly all under-exposed. The best of this series had had an exposure of eight seconds with stop  $f/40$ , which was found to be just correct with the same plate for an average day in England. In the tropics all photographic work ought to be done early in the morning or late in the evening. The midday sun is too vertical to permit of the securing of pleasing effects.

"Never show a part only of anything in a photograph—such as the top of a table only in an interior, or a portion of a figure in the foreground of a landscape." This is a rule which every artist will immediately indorse, but which is frequently violated by photographers. Members of the Postal Photographic Society who break this rule are "dropped on" severely; *e.g.* "The lady in — has had both legs amputated most skillfully, for she still stands and enjoys the view!" Another remark concerning a picture in which the head and shoulders only of a cow are visible, is that "evidently — thinks that half a cow is better than no beef!"

"Dull light is best for waterfall work—direct sunlight gives too much chalkiness and spottiness."

Every one remembers Mr. H. P. Robinson's famous illustration (in his "Pictorial Effect") of the ridiculous effect of the introduction of incongruous figures into the foreground of landscapes. But one of the albums of the Postal Photographic Society contains a still more delicious example of the same thing. On a large print we see that glorious river, the Wye, winding through flowery

meads, while rock and mountain rise beyond. Seated on the river's bank—all resplendent in tall silk hat and shiny attire—is a “boy in buttons,” one of those appendages to the rich who are kept to do odd jobs, run errands, etc. The same boy confronts us all in his master's pictures, and I have to thank him for one of the heartiest laughs I ever enjoyed. No wonder we read in the note-book—“Figures for the foreground are much needed, but not such as these. A ‘boy in buttons’ facing a stream is about as incongruous as Her Majesty's navy in a potato-field.” “The author of the *page* print should turn over a new *leaf*. Mr. Robinson's ‘Arry’ is not a patch upon the ‘Tiger’ of this album.” It is only fair to add that the photographer in question was quite a beginner, and that he would probably now shrink from committing such an artistic sin as much as any of his critics.

“How many pictures might be improved by cutting—taking, say, an inch or half-inch off the foreground, a slice off a dark side, etc.” This is very true, and photographers who seem to value a print only for the number of square inches it contains, would do well to bear it in mind. Test the effect by placing a strip of paper or card-board over those portions of the picture which it is proposed to remove. Very often lovely little bits can be cut out of large prints which are themselves worthless because of faulty composition. The most effective 5 x 4 print I ever saw was from a 12 x 10 negative, which yielded, as a whole a perfectly hideous picture.

“I hate sharpness.” This remark is made by a member who is famous for his success in portraiture; the platinotype process is his favorite, and he adds: “These pictures in silver would be more distinct, crisp, and definite; but those qualities would, in my opinion, *kill them*.”

I have lately been using a good deal of the Eastman positive bromide paper, and I must say that I am greatly pleased with it. I have hunted out all my thin negatives, and have obtained prints from them infinitely superior to anything I ever got on albumenized paper. For such negatives my average exposure has been three seconds, at a distance of one foot from an ordinary gas burner. The entire process is simplicity itself, and cannot fail to be immensely useful in the winter. Then with it I can get a print from my negative immediately I remove it from the fixing bath, by simply wetting the paper and squeegeeing it down on the wet negative.

I have just spent more than one pleasant hour in the study of the 200 lantern slides which have been collected by the committee of the Camera Club for exchange with your New York Society. Unless I am much mistaken you will be greatly pleased with them, giving as they do illustrations of English life such as hardly any “professional” has yet thought worth taking. The yacht scenes are very fine, and Mr. Gale's—as always—superb. Just now (the first week in July) we are enjoying most glorious weather, and every photographer is taking advantage of it. A friend of mine has just taken 78 negatives with an Eastman roll holder in two days; but such “shooting” is too rapid for

TALBOT ARCHER.

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I SEND my yearly subscription to the BULLETIN. It will not do to get behind, the magazine is too valuable. Hoping that I may live long to read and you to publish it,

I remain, yours very truly,

G. N. MOORE.



## THE EXHIBITION OF PICTURES AT ST. LOUIS.

## SECOND NOTICE.

B. L. H. DABBS, of Pittsburgh, obtained a silver medal for portraits. A 12 x 20 panel in this exhibit, a full-length figure of a lady, was a perfect gem, the posing and lighting being very artistic, while the details in the drapery showed fine chemical effects in the negative. Two 16 x 20 portraits of a boy, in different positions in a rustic gate-way, were also very good. Another handsome picture consisted of two ladies sitting upon a sofa apparently looking at an album. The beautiful lighting and the graceful pose of the figures, together with the artistic arrangement of the long flowing white dresses, made this picture a superb example of fine photography. We have never seen anything equal to the beauty of this drapery, and the care with which the fine details have been brought out.

There were a number of other handsome pictures in this exhibit, and they all showed evidences of fine artistic taste and expert photographic work.

S. J. Dixon, of Toronto, Canada, also received a silver medal for portraits. These were fine large heads with artistic feeling in posing and lighting—also a number of very handsome cabinet pictures. The most interesting picture in this exhibit was a photograph of Mr. Dixon and his horse Hero, with one fore-foot upon a chair and the other upon his master's knee, the latter's foot also being on the chair; the whole is very life-like and speaks of a very intelligent animal.

G. M. Elton, of Palmyra, N. Y., another silver medalist, was also the winner of the \$50 cash prize offered by our publishers for the best twelve cabinet portraits made on the Stanley plates. This exhibit was remarkably well arranged and showed much artistic taste. One large frame contained 12 long panels, 10 x 22, of very fine portraits. Another frame contained seven heads, mostly children—vignetted, grounds shaded—concaved in center to resemble plaques, and framed diamond shape; making a very handsome and artistic set of pictures. Mr. Elton's cabinet portraits that secured the Anthony prize we have obtained for illustrating the BULLETIN, and he is now busy preparing the large number of silver prints needed for our issues.

Gilbert & Bacon, of Philadelphia, obtained another of the silver medals. Their exhibit consisted of a number of large heads and three-quarter figures from 11 x 14 plates. We hardly think these pictures were fair examples of the work of this well known firm; we believe we have seen better work done by them.

C. W. Motes, Atlanta, Georgia, another silver medalist, showed a number of very beautiful pictures, both large and small, posed against black backgrounds, and draped and lighted for, statuesque effects. Some of these were strikingly beautiful, notably "Helen of Troy," and a female figure with an ancient water pitcher on her head. The rest of the exhibit embraced large full-length portraits and cabinets in the usual styles, but all finely executed.

H. McMichael, Buffalo, N. Y., also obtained a silver medal for his portrait work. His exhibit was a choice and admirable collection of portraits, ranging from half-life size to small panels, all contained in four handsome frames. The whole exhibit was fully up to the best work of this well-known artist.

E. H. Lincoln, Dorchester, Mass., received a silver medal for pictures other than portraits. His exhibit embraced eleven exceedingly fine marine views and six interiors from 8 x 10 plates. The marine views were among the finest seen at St. Louis, and the interiors were also very fine.

G. B. Wood, of Philadelphia, who also received a silver medal for pictures not portraits, exhibited a number of genre pictures that were attractive and interesting.

A special silver medal was awarded to T. R. Burnham, of Boston, for a life-size three-quarter length portrait of a lady, being a direct contact print of a 36 x 60 inch negative from life. This is the largest dry plate negative ever made in this country, if not in the world. The negative is a plate of glass half an inch thick. It required three pails of solution to develop it. The lens used for this gigantic piece of work was a No. 8 Euryscope, with a small diaphragm. The time was twenty seconds. Altogether this is a fine piece of work and certainly deserved the medal it obtained. The illumination of the plate was remarkably uniform and the definition good to the edges. The rest of this exhibit contained some remarkably fine views on large plates made in London and Paris. Among these we noted the Hotel de Ville, Colonnade of the Louvre, Place de la Concorde, Church of the Madeleine, and the Grand Opera House, all in Paris; while from London the most striking was a large view of the Houses of Parliament. All the pictures showed good photographic work and much artistic taste.

The second of the special silver medals was awarded to the Eastman Company, of Rochester, for their fine exhibit of gelatino-bromide enlargements. In this collection we found seventy-two pictures, which we were told was the result of two days' work at the Eastman factories. A more remarkable set of enlargements we have never seen before. From one cabinet negative there were eight enlargements of gradually increasing size, until a portrait 31 x 45 was obtained; and each enlargement appeared to have about the same sharpness. There were many examples of life-size portrait heads, and some of heroic size, having faces twelve inches long, all made from cabinet negatives. The judicious use of a tinted varnish on some of the three-quarter and full-length pictures gave a photographic effect to them somewhat resembling ordinary albumen prints. In this collection we must not forget to mention a handsome frame of enlargements upon gelatino-bromide paper, from negatives of microscopic objects, made by W. H. Walmsley, of Philadelphia. These were extremely beautiful, and surpassed anything of the kind we have seen.

This completes our review of the pictures of the medalists, except the foreign exhibitors, and these will be the subject of a separate notice.

We have only a little more space at the present time to devote to pictures, and we will take up some of the other exhibits by Americans.

Among the most artistic portraits displayed at St. Louis, those of G. L. Hurd, of Providence, stand second to none. In this exhibit we found eighteen neat, narrow oak frames, with half, three-quarter, and full figure portraits, about 14 x 17 in size. The quiet mounting of each picture left the eye at rest on the picture itself. Among these gems of artistic portraiture, we noted two views of a lady's head, with black background, that were exquisite pieces of work. Very little retouching had been done on these pictures, and their soft, natural appearance was very pleasing. An old gentleman with spectacles on his forehead was a charming study. A capital portrait of Treasurer G. M. Carlisle, of the Photographers' Association of America, looked as if it would speak to us, it was so life-like. An old fiddler sitting inside at a window was another artistic study that pleased us very much. A picture of a lady in a fur-trimmed cloak was a beautiful piece of work, full of soft and delicate detail. Another portrait of a lady

sitting in a chair, showing profile face, was also very fine. In this case the white dress offered scope for fine lighting and posing, and every detail was brought out with great beauty. Altogether this was a very beautiful exhibit, showing a minimum of retouching and other artificial work, and a maximum of fine artistic feeling, with skillful management of the light and camera. The smaller work of this exhibit showed the same characteristics seen in the larger—fine feeling and careful manipulation—although it was not as effective as an exhibit.

In the next BULLETIN we hope to give a rapid review of most of the other pictures.

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## ON THE BUSINESS MANAGEMENT OF A PHOTOGRAPHIC ESTABLISHMENT.

BY G. M. CARLISLE.

[Read at the St. Louis Convention of the Photographers' Association of America, June, 1886.]

JOSH BILLINGS once advertised a lecture on "Milk." I attended that lecture. Upon a table on the platform was a pitcher of milk and a glass. When Mr. Billings came upon the platform he poured from the pitcher and drank a glass of milk, remarking that "the best thing he ever saw on milk was the cream," and made no further allusion to milk during his discourse.

This association has asked for papers upon photography. Like Josh Billings, the best thing I ever saw on photography was money.

I conclude that all professional photographers will agree that money is their chief aim in pursuance of the photograph business.

However much we may love the art for its art, we none of us wish, nor can we afford, to ignore the money value of our labor while pursuing the shadowy art of photography.

Much, yes, very much, has already been written upon optics, lighting, posing, developing, printing, toning and retouching. It would be very difficult to adduce anything new or interesting upon any of these subjects; and while I admit the subjects named offer a broad field for the use of technical terms and a display of learning, I conclude that the average photographer has long since tired of elaborately written papers offering no advancement of a nature to fill the purse.

The question which presents itself to me at this present time would be something in this form: "Is the status of the photographic business as managed or conducted, satisfactory?" If not, is there is a remedy? It would seem that a solution of this question would be of more value to the profession to-day than the most learned or elaborate paper upon the art or chemical science of photography. And a way to obtain more dollars with the means at hand is what we all need more than a greater number or variety of developers; for, as the New York *Sun* said editorially, some months ago, that a large proportion of the very much prevailing insanity of the present age could be traced to new developers, having reference, I presume, to the "missing link" in developers, supposed to have been discovered in a mortar-bed in Chicago not long since. The question of prices, too, has been more or less discussed and written upon in this and other countries. Even legislation has been asked for. The Photographers' Association of America has many times been appealed to for some means of relief from the curse of cut prices. The opinion of the men of greatest experience and good judgment has been that no legislation by our society can possibly determine what value a man shall set upon his labor and skill.



Even if it were possible for the association to fix a scale of prices, membership is not compulsory, and any member would have the right to withdraw and make a price to suit himself.

The cabinet size seems to regulate the price in all photographic establishments in this country; therefore we will consider only that size in this paper.

It is a well-known fact that some subjects or patrons require very much more of their photographer than do others, and under the present system of conducting the business there is no way to obtain compensation for the extraordinary trouble and labor we are frequently called upon to perform, in order to gratify the more exacting people who desire to try more than one costume or mode of hair-dressing.

Is not the fault largely due to our want of proper business rules or tact in managing our affairs in the studio?

Business men engaged in other callings seem to have adopted rules and established customs which afford perfect control of time and labor, and at the same time give no offense to patrons.

The plumber manages to get paid for his time, even to that spent in passing to and from his shop to your place of business when he is called upon to repair your water-pipes, and you not only pay for what solder he has used, but for what he has wasted.

The dentist so manages as to be paid for every moment spent in your interest, and you pay for every particle of gold or other stock used or wasted. We certainly ought to be able to devise means by which we can control our patronage.

We have seen that the plumber and the dentist succeed in doing so.

Are we not as good business men as either?

My remedy for the evils complained of is a scale of prices.

Each photographer should charge for cabinets, say, from \$3 to \$8 per dozen, mounting each class differently. To illustrate: The grade at \$3 per dozen, cheap mounts, one sitting and proof. Second grade, better mounts, two negatives and proofs, at \$5. Third grade, \$6, with better mounts, three negatives and proofs. Fourth grade, \$8, the best mounts procurable, elegantly printed, and negatives made until you are satisfied yourself, and render proofs with different lighting and posing that will not fail to earn the appreciation of your patron.

I firmly believe that there is not a man in the photograph business to-day, however cheap he may cut his prices, but that under such a scale of prices can find a certain percentage of his trade who will order the higher grades when the plan is properly presented; therefore scaled prices will help the cheap man.

Now let us see what it will do for the man of higher prices.

In every establishment, however select, there will come people who cannot afford to pay \$8 per dozen for cabinets, any more than all families can afford to live in brown-stone mansions, and he who has no scale of prices must see a certain percentage of people go out from his place to obtain cheaper work.

I claim that no man compromises himself or lowers his dignity in trying to meet the demands of the people, and photographers can as properly cater to the masses as well as dealers in other merchandise.

Even the best hotels in the country have of late fallen into that line of practice, and prices are scaled according to rooms.

What merchant would think of opening a boot and shoe store with only \$3 boots or shoes? Who could succeed in the carpet trade with only one price for carpets?

By the method of scaling prices, every photographer would find his level in his community, and if incapable of showing samples of good work, would probably receive a majority of orders from people who only patronized cheap goods in other lines.

It costs nothing to try the plan of scaled prices, and I assure you of satisfactory results if the plan is managed in a thorough business way.

The people are becoming demoralized upon this question of prices.

Establishments which have for years been rated first-class, and whose proprietors have charged high prices, made a break to \$3 per dozen, and the people naturally think strangely of such a course; whereas, if they would maintain a good price for a portion of their work under the graded system, it would show at once why a low price could be made for a class who wished it, and at the same time people who wanted special care taken of their work, by paying the old rate, could receive the same attention as in former years.

There is no doubt but that money can be made on cabinets at \$3 per dozen, provided they are ground out upon the ready-made clothing principle, but every one does not wish that class of photograph, and here comes in the scaled-price system, both to the advantage of the photographer and his patrons.

I do not claim that a larger volume of business will be done by this method, but a more satisfactory and equitable business is sure to result.

There is an old proverb which says: "Yield not to misfortunes, but surmount them."

Do not complain of your neighbors' low prices, but scale your own to meet the exigencies of the day.

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### IS PHOTOGRAPHY ART?

BY F. H. WILSON.

[Read at the St. Louis Convention of the Photographers' Association of America, June, 1886.]

WHEN, fifty years ago, the new baby, Photography, was born, Science and Art stood together over her cradle, doubting what they might expect from her, wondering what place she would take among their other children. Science soon learned that she had come with her hands full of gifts, and her bounty to astronomy, microscopy and chemistry, made her name blessed among these, her elder sisters. Art, always more conservative, hung back. The gifts at first were fewer, and she seemed an ominous rival to the others. She threatened to leave them nothing to do. But slowly, jealous art, who first frowned and called the rest of her brood around her away from the parvenu, has let her come near, has taken her hand, and is looking her over with questioning eyes. Soon, without a doubt, she will have her on her lap with the rest.

Why has she been kept out so long? Almost from the beginning she claimed a place in the beautiful house of art. In spite of rebuffs she knocked at its doors, though the portrait painter and the critic flung stones at her from the housetop, and the law itself stood at the threshold denying her entrance. Those early efforts were not untinctured with a fear that if she did get in she would run the establishment; but the law long since owned her right, and instead of the

crashing boulders of artistic dislike and critical indignation, the volleys that drop at her feet now are mere mossy pebbles flung by similarly mossy critics or artist-bigots. Still, the world at large hears them rattle, and does not yet give her the place and estimation she has won.

For she is a true daughter of art. The name of artist, implying technical skill above the common craftsman's, a dexterity of hand guided by high intelligence, a glorious marriage of manual and mental excellency, has always been a proud and honorable one. It is none too high and honorable for those who faithfully follow her. Art meant, originally, handiwork. Painting, now so haughty, was once considered simply a superior kind of artisanry, as some would have our art now. The artist in colors and the artist in gold or glass were quite on a footing. Michael Angelo asked only the title of "master-workman." Fine art originally afforded pleasure alone, but as its object developed its aim became higher. Skilled handiwork is art, and photography is surely this. Indeed, if the question were to be waged on definition it would be easily won. Ruskin himself opens a gate wide enough to let in photography with all her tools, when he says, art is the expression of man's delight in the work of his creator. Hamerton says art is selection; that is exactly the main idea of good photography.

But suppose painter and photographer out together in search of a picture; with equal artistic perception they choose a scene, a bit of landscape. Figures and accessories are posed and arranged; and they will find the photographer's the severer examination to pass, as his work must be done before the execution of the picture. When both are finished, although the painting may be very like the photograph, save in its colors, yet it may claim a place of distinction in the gallery, while the aspirations of its companion may not soar above the parlor table. Where did their way separate? Where did this difference begin? "With the first stroke of the brush," answers the unbeliever, "when the painter began to modify crude nature by his art." There is the key to the whole question. "Nature does not compose, and the photographer could only take her as she is." But what of the careful choice of the view-point, the posing of the figures? Why did he lop off that branch and put that dark stone in the foreground?

There art began—with the first touch of a man to shape things towards his ideal, be that ideal merely an agreeable composition or the loftiest conception of genius. The higher it is the more is it art. Art is head and hand-work, and a creation deserves the name of art according to the quantity and quality of this expended on it. Simply sit down squarely before a thing and imitate it as an ox would do if an ox could draw, with no thought or intention save imitation, and the result will cry from every line, "I am not art, but machine work," though its technique be perfection. Toil over arrangement, and meditate on point of view and light, and though the result be the rudest, it will bear the impress of thought and of art. I tell you art begins when either man, with thought forming a standard of beauty in his mind, commences to shape the raw material towards it. In pure landscape, where modification is limited, it begins when the artist takes one standpoint in preference to another. In figure composition, where modification is infinite, it begins with the first touch to bring the model into pose. When he bends a twig or turns a fold of drapery, the spirit of art has come and is stirring in him. What matters his process?

Some such ignorance reminds one of the early dread of the locomotive. It was incomprehensible, uncanny; it went too fast. So it is with photography—



that goes too fast for the critical "one-horse shay" to keep up with it, and so out of the dust in its wake comes the shout of the caviller, "You are not art!" Surely it is time this artistic bigotry was ended. In one of last winter's exhibitions hung a painting of a French peasant girl. It was a most careful study of this awkward and far from handsome daughter of the soil, standing in a garden in her faded blue working clothes. Her expression was one very familiar to some photographers. One would almost have guessed how much she was paid an hour for standing for her picture. It told no story, it had no attractiveness, yet every critic noticed it, for its painting was supremely clever—the perfection of process. But it fell cold and flat on the warmest feeling for beauty and sentiment. In a much less conspicuous position is a little photograph of a group of five girls. When I say its title is "A Merry Tale," you will need no further description. Its composition is as nearly perfect as may be, its lines and contrasts of black and white and play of light and shade are a marvel and delight, and no one ever saw it without pleasure—which it is the first duty of art to give.

(*To be continued.*)

## IMPROVEMENTS IN PHOTOGRAPHIC PRINTING AND ENLARGING.

BY DAVID COOPER, *of Rochester.*

(*Continued.*)

DEVELOPMENT is accomplished in an exceedingly simple and cleanly manner, the well-known oxalate of iron developer, in a slightly modified form, being found the most suitable for all purposes so far. The formula and directions read as follows.

### No. 1.

Oxalate of potash .....	1 pound.
Hot water .....	3 pints.
Acidify with sulphuric or citric acid. Test with litmus paper.	

### No. 2.

Protosulphate of iron .....	1 pound.
Hot water .....	1 quart.
Sulphuric acid (or citric acid, $\frac{1}{4}$ ounce) .....	$\frac{1}{2}$ dram.

### No. 3.

Bromide potassium .....	1 ounce.
Water .....	1 quart.

These solutions keep separately, and must be mixed only for immediate use.

### TO DEVELOP.

Take in a suitable tray—No. 1, 6 ounces; No. 2, 1 ounce; No. 3,  $\frac{1}{2}$  dram.

Mix in the order given. Use cold. After exposure, soak the paper in water until limp; then immerse in the developer.

The image should appear slowly, and should develop up strong, clear and brilliant. When the shadows are sufficiently black, pour off the developer and flood the print with the clearing solution.

Acetic acid .....	1 dram.
Water .....	1 quart.

Do not wash the print after pouring off the developer and before applying the clearing solution.

Use a sufficient quantity to flow over the print, say 2 ounces for an 8 x 10. Allow it to act for one minute and then pour it off and apply a fresh portion; repeat the operation a third time, then rinse in pure water, and immerse for ten minutes in the fixing bath.

Hyposulphite of soda ..... 3 ounces.  
Water..... 1 pint.

After fixing, wash thoroughly two hours and hang up to dry. Use fresh developer for each batch of prints. With a glass-bottomed tray, seven ounces of developer are sufficient for a 25 x 30 print.

*Object of Clearing Solution.*—The object of the clearing solution is to prevent the precipitation of the iron from the developer in the fiber of the paper. This can only be done by keeping the paper acid while washing out the developer.

Citric acid may be used instead of acetic in the clearing solution, in which case use  $\frac{1}{8}$  ounce to the quart of water. Citric acid is less liable to cause blisters.

Blisters sometimes appear in bromide paper, and may be avoided by using a little common salt in the first washing water after fixing. The hypo must not be stronger than 3 ounces to the pint of water.

*No Toning Required.*—With permanent bromide paper the final tones are obtained entirely by development, and range from a soft gray to a rich velvety black, depending somewhat upon the density of the negative and the quality of the light used in printing.

*Clean Dishes. Clean Hands.*—The faintest trace of hyposulphite of soda or of pyrogallallic acid is fatal to good results with bromide paper, and the operator cannot be too careful to avoid any contamination. The tray used for developing with oxalate should never be used for anything else.

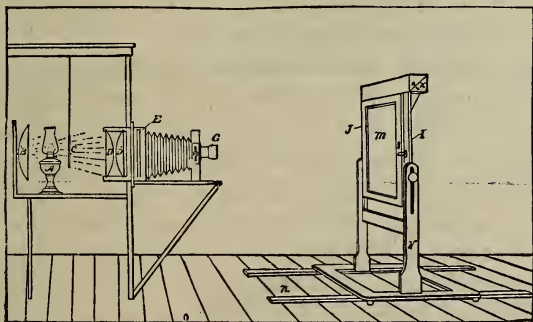
Mention has been made in these directions regarding the use of a dilute solution of acetic acid and water immediately after development, and before washing with water at all. This is a most important point, and cannot be too strongly impressed on the mind. A brief hint as to the reason for using the acidulated water is given in the foregoing directions, but it is so important that it deserves further consideration. Pure whites cannot possibly be *obtained* and *retained* where this precaution is neglected. As noticed in the directions, it has been proved that thorough removal of the oxalate of iron can only be accomplished while the print and water are kept acid. It seems that the degree of acidity needs only to be very slight as the formula shows. This has been commented on, and several who doubt the efficacy of the homœopathic dose prescribed have increased the proportion, but have not found any additional advantage. While in cold weather a moderate increase of the acid may not have any serious influence, it may in hot weather develop a tendency to blistering, and should be avoided. In any case it is not so much the amount of acid as the repeated application of the very dilute solution recommended, which will fulfill the demands.

After fixing, another important measure is the use of a first washing water containing common salt, say half a pound to two gallons of water. This will most effectually prevent blistering, unless provoked by some unusually careless manipulation.

Two hours washing in ten or twelve changes of water is sufficient to remove all traces of hypo, and the prints are ready for mounting immediately, if desired,

or they may be dried by allowing to drain on a screen covered with cheese cloth. Mounting on muslin-covered stretchers may be accomplished either wet or dry, the first method being the most expeditious and satisfactory. This is conducted as follows: Drain your print of all surplus moisture, and lay it face down on a table, over which is thrown smoothly a well wetted sheet of rubber-coated cloth, apply the paste thoroughly to the back; paste also evenly, and without lumps, over the face of the muslin stretcher. If the print is accurately centered on the sheet of paper, the mount may be laid on it, face down, and rubbed in contact with a wad of soft cloth, care being taken to avoid rubbing too close to the stretcher, as this would present a visible outline on drying, and mar the appearance of the print. All air-bubbles should be carefully pressed as nearly towards the side as is safe. Take hold of the stretcher by one corner and lift together with the rubber cloth; on dropping the latter, it will leave the surface of the print without resistance, which may be placed face up, and with the palm of the hand wetted, the edges can be brought into perfect contact. Drying may be hastened by exposure to a current of air in a well ventilated room.

Mounting on card-board may be accomplished in a somewhat similar manner. The print is pasted lying face down on the wetted rubber cloth; it is then raised and centered on its mount as in ordinary mounting. The only precaution necessary is that the damp rubber cloth is laid down on the face of the prints, and with a squeegee uniformly and rapidly moved back and forth, until contact is assured. Lift the rubber cloth by one end, and the mounted print will fall to the table by its own weight. So much for manipulation.



ENLARGING APPARATUS FOR ARTIFICIAL LIGHT.

*Apropos* of the reference I made to the proper centering of a picture as an aid to facilitate mounting, it is important that I direct your attention to the kits which are supplied with each enlarging easel. As I have mentioned before, their first purpose is to hold the paper firmly, and next to provide an accurate guide by which to determine the proper adjustment of your picture.

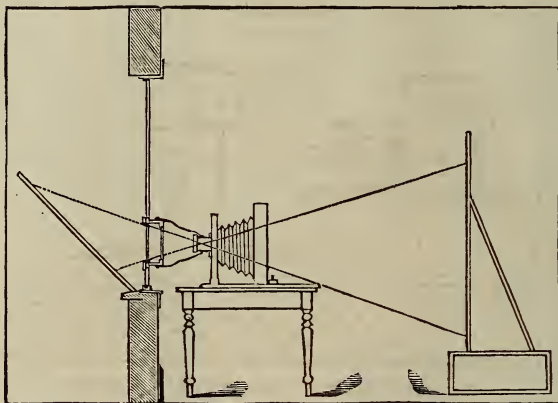
The apparatus now thrown on the screen is precisely similar to that noticed at first, with the addition of a pair of condensers and kerosene oil lamp as a suggestion for its use as an excellent artificial light. The lamp represented here is of the central draught kind, and known as the electric. A still better lamp, constructed specially for the purpose, which gives a perfect flat field of brilliant illumination, may be purchased for about five dollars.

It may not be out of place to say, that so far, no self-contained apparatus for enlargement has yet been constructed that at all comes up to the require-



ments of perfect definition or illumination, and therefore their use has proved more of a detriment than otherwise to experimenters with the permanent bromide paper. A well-constructed magic lantern may be used successfully where the negatives are limited to  $3\frac{1}{4} \times 4\frac{1}{4}$  or at most  $4 \times 5$ . This is demonstrated by the apparatus on the stage; but as the professional photographer mostly deals with larger negatives, to him its use is not very practical.

To enable any man who does not feel justified in purchasing any special apparatus to arrange a simple means by which work of the most satisfactory character may be made, I give a diagram of an arrangement that has been found to answer perfectly. It is so well depicted here that it hardly needs explanation. It consists of a camera and lens placed before an aperture in a darkened room, which will accommodate the negative. To prevent any extraneous light entering the room, the lens is hooded with some suitable flexible material which will allow of a focusing movement of the box. The large end of the hood is fastened around the aperture containing the negative, so as to make the room secure from the entrance of daylight.



AN IMPROVISED ENLARGING APPARATUS.

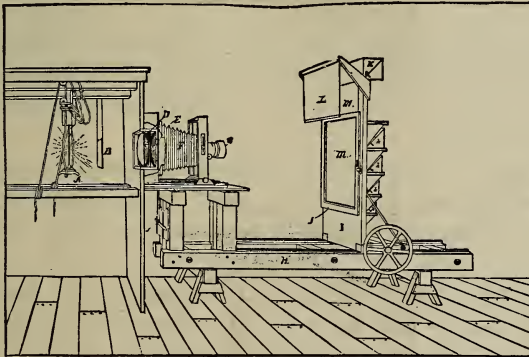
The easel is a simple affair and may be a flat door, drawing board, or table-top tipped up endwise and secured in position. On this the focusing is done, after which the sensitive paper is pinned up and the exposure made.

A number of persons desirous of embarking in this business on a large scale, having come many miles to see the apparatus at the factory, the Eastman Company have permitted me to prepare a diagram of their own outfit, having no secrets connected with enlarging that are not free to the world; this is done with the object of saving time and expense to would-be extensive enlargers. It may be said right here, that no better work chemically is to be obtained with an elaborate apparatus, nothing being gained save convenience in a large business.

By means of the magic lantern I will project the diagram spoken of on to the screen. Its purpose is plain, and being precisely similar in principle to the apparatus already described, I will merely call attention to the fact that it is provided with a pair of 12-inch condensers, which are always a necessity where artificial light is used. In this case the electric light supplies the illumination, which it is necessary to soften by means of a piece of ground glass between the

condensers. Immediately in front of the light hangs a frame, B, which is designed to carry stained glasses of exceedingly light tints, yellow to increase contrast in a weak negative, and very light blue to decrease it in the case of strong and yellow plates. This is quite a dodge, and may be used as a most efficient aid in these cases; and is recommended to work equally well with any method of illumination.

Now let us glance at the practical importance of this subject to the photographers of to-day. When I say of the "photographers of to-day," it is with good reason. The long period of comparative quiet in photographic discovery that succeeded the introduction of the wet plate, dropped multitudes of photographers into the mire of self satisfaction, born of a consciousness that they knew all there was to be known about photography as it existed in their generation, and they felt quite certain that nothing was going to be produced that would disturb them in their day. So when the dry plate came around modestly asking recognition, it was met in numerous instances with the upturned nose of scorn by the men who hugged the belief that photographic knowledge and ex-



APPARATUS USED IN THE EASTMAN FACTORY.

perience had its Alpha and Omega in their establishments. It was with supercilious chuckles that they watched the struggles of the young men on the other side of the street in their determination to overcome the difficulties of a new process, which would be a power that would enable them to get the lead of their older and more self-confident competitors. Did they succeed? Aye, they did, and to-day from every part of the country is to be heard the wail of the once leading artist, that "The business is ruined." The fact is that he failed to adopt the new process in time to make it a feature of his establishment at increased prices, until his neighbor at reduced rates showed better work than he was making, captured first the babies and then the rest of the family. That should be a lesson, and therefore I urge it upon the photographers of to-day to investigate this matter thoroughly for themselves. Don't persuade yourselves that it is best for you to wait until Smith, or Jones, or Robinson makes a success of it before you will try, because either one or the other of them will get your trade while you are waiting, and the observing public will quickly remark when you advertise that you are prepared to supply the demand: "Aha, I see those young chaps across the way have forced old man Gallic to follow their lead." Quite a drop to fall from the proud position of the "leading photographer" to what the public quickly recognizes you as, "the following photographer."

Apart from this consideration, is there any money in it? Five minutes' thought, after seeing the work that can be produced, will settle that question in the affirmative. The possibility of being able to assure your customer of an absolute counterpart of a cabinet with which he or she expresses perfect satisfaction, unaltered in facial line or expression by the idealization of any artist, and at a cost vastly below that ever asked before for anything approaching it in quality, is a guarantee of itself that there is money in it. Besides this, consider the possibilities of pushing business by advertising this specialty. If you look at the advertising columns of the journals, you will see that the dealers recognize in it a specialty that will demand attention, and make it a prominent feature of their notices, and with good reason, for this is one of the lights which it would be unwise to place under a bushel.

The matter of quick proofs from wet negatives on "A" paper is one of immense importance, and no photographer can afford to lose sight of it. The ease with which this can be accomplished, and the result of such a method of dealing with your sitters, is too evident to be enlarged upon. It is rather early perhaps to urge the adoption of the permanent bromide paper for general work, as the public needs to be educated gradually to a change. For while the most cultivated and art-loving class are unanimous in favor of the engraving black tone, those less informed on these subjects no doubt entertain other preferences. These will gradually die out, as intelligent taste sets the example and leads in another direction.

Before closing, it is important to state, as showing the certainty and uniformity both of the paper and the method of manipulation, that the large exhibit of prints presented at this convention was begun and completed in three days.

This needs explanation. So great was the pressure of business on regular orders, that it was almost decided to abandon the contemplated exhibition, as it seemed a hopeless task to do anything creditable in such a limited time. Bolder counsel prevailed, and with great energy the work was pushed. "Fortune favored the brave." The results can certainly be allowed to speak for themselves.



THE *Pharmaceutical Record* says that editing a paper is a pleasant business—if you like it. But, like most other occupations, there are some annoyances.

If the type is large, it don't contain much reading matter.

If we publish many formulas, says the editor, folks say they are not reliable.

If we omit them, we have no enterprise or are know-nothings.

If we have a few jokes, folks say we are rattleheads.

If we omit jokes, folks say we are fossils.

If we publish original matter, they scold us for not giving selections.

If we give selections, people say we are lazy for not writing more, and give them what they have not read in some other paper.

If we give a complimentary notice, we are censured for being partial.

If we don't, all hands say we are a great humbug.

If we remain in our office attending to our business, folks say we are too proud to mingle with other fellows.

If we go out, they say we don't attend to our business.



## THE PHOTOGRAPHIC SECTION OF THE AMERICAN INSTITUTE.

## ANNUAL EXCURSION.

THE annual outing of this association of photographers is to take place on Thursday, August 26th. The rendezvous will be at Schuler's Fort Lee Park Hotel, at Fort Lee on the Hudson. The tickets for the dinner are now ready, and can be obtained of Mr. J. B. Gardner, 147 Fulton street, New York, or from our Associate Editor, at 591 Broadway, New York.

The place of meeting is very picturesquely situated, and is surrounded by charming scenes for those who wish to take their cameras. All who go will, without doubt, have an interesting and enjoyable time.

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 OUR ILLUSTRATION.

THE pictures used to illustrate this issue of the BULLETIN are from portraits from the studio of Sarony, of Union square, New York. It is probable that this artist has made more portraits of stage celebrities than any other American photographer, and we are fortunate in being able to obtain the use of some of his prints of noted persons to copy for illustrations for our journal. The work speaks for itself, and although the pictures have suffered by reduction, each subject is a study from a master hand.

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*To the Editors of* ANTHONY'S PHOTOGRAPHIC BULLETIN.

THE first of my subscription to the BULLETIN has come to hand, and for your encouragement I deem it my duty to tell you that I am simply delighted with it. I took the liberty of showing it to a local journalist, and he said that for matter and execution he did not think he had seen its equal. But, more than all, for some time I had had a difficulty in getting bright prints (silver), but reading (in the first number I opened) a discussion on the proper time to float the paper, I tried it and, *presto*, my difficulties vanished. This one wrinkle was to me worth more than the twelve months' subscription. May you go on and prosper.

Wishing you all success, I am, yours faithfully,

WM. DOUGALL,  
New Zealand.

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*To the Publishers of the* BULLETIN.

THE bound volume of my BULLETIN for 1885 came this morning, and makes a superb addition to my library. I am extremely obliged for your kind attention to the matter, and especially for replacing the three broken photographs with perfect ones, for which I should have been glad to pay. Bound in this way the BULLETIN will be, more than ever, my constant resource.

I am, Gentlemen, very truly yours,

CHAS. H. GOULD,  
Chicago.

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I WOULD as soon think of doing without a developer as of going without the BULLETIN. It contains the most interesting reading matter for the price that I have ever seen.

Yours truly,

H. J. SUTTON,  
Penna.

# ANTHONY'S Photographic Bulletin.

EDITED BY

Prof. C. F. CHANDLER, Ph.D., LL.D.,  
Aided by ARTHUR H. ELLIOTT, Ph.D., F.C.S.,  
and a corps of practical assistants.

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Advertisements should reach us not later than the Saturday preceding the issue for which they are intended, otherwise we cannot promise to publish them in the succeeding number. It is also necessary to notify us of any alteration before the date above mentioned, and to state for what period the advertisement should be continued—whether for one, six, twelve or twenty-four issues.

*E. & H. T. ANTHONY & CO., Publishers.*

## THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.

REGULAR MEETING, JUNE 8, 1886.

A REGULAR MEETING of the society was held at the society's rooms, No. 122 West Thirty-sixth street, on June 8, 1886, and was called to order at 8.15 by the *President*.

Among the audience were several ladies.

Mr. BEACH proceeded with the regular order of business.

He made the usual announcements for social meetings to be held in the library club-room on Friday evenings, and stated that there would be no regular meeting in the month of July, that being the month when most of the amateurs were out of the city. An officer of the society would probably be at the club-room Wednesday and Friday evenings during the month to receive any who chose to call.

At a social meeting on July 14th, the subject of "Shutters" would be discussed. An experience meeting, such as was held last year, was announced for the 18th of August.

Mr. Randall Spaulding offered to conduct a field excursion to Little Falls, N. J., on Saturday, June 19th.

On the 22d of June the St. Louis Convention

of the Photographers' Association of America was to be held, to which he had been invited, but could not attend. The convention will last until Friday, the 25th of June. Dr. Elliott will doubtless advise us before the close of the meeting the best route to take and the rates of fare.

The *Secretary*, Mr. Granger, read a synopsis of the proceedings of the last meeting, which was unanimously adopted.

The following communications were then read by him:

157 WEST 47TH STREET,  
NEW YORK, June 4, 1886.

Mr. JOHN T. GRANGER,

*Secretary Society of Amateur Photographers of New York.*

DEAR SIR,—It is with very grateful feelings that I acknowledge the receipt of a copy of the resolutions drawn up by the photographic society in memory of my husband. If I could take any comfort at all, I ought to do so from all the sympathy that has been shown me by my dear husband's friends. He was very much interested in the photographic society, and I hope you will express to the gentlemen that he knew how grateful I am that he has been so kindly remembered by them. Knowing how much I have lost, I am sure I have your sympathy.

With renewed thanks for your kindness, I am,  
Yours truly,

REBECCA S. ROBERTSON.

THE BOSTON SOCIETY OF AMATEUR PHOTOGRAPHERS.

Mr. F. C. BEACH,

*President Society of Amateur Photographers of New York.*

DEAR SIR,—I have sent to you by this mail a copy of the rules which the Committee on Exhibitions of this society adopted at their last meeting. It will be impossible for this society to undertake to have the next exhibition in Boston, as the society is moving into new rooms, and the work of reorganization which this step necessitates will take up all of the time and funds which the society will have at its disposal this year. \* \* \*

Hoping that the rules and classification which the committee has drawn up will meet with the approval of your society,

I am, very truly yours,

GEO. E. CABOT,

*Chairman Committee on Exhibitions.*

Rules and classification to govern the exhibition to be held in the fall of 1886-87, as recommended by the Committee on Exhibitions



of the Boston Society of Amateur Photographers were then read by the Secretary.

The preliminary report of the Special Committee on Joint Exhibitions was presented and read by the Secretary.

Mr. Beach then read a portion of a letter from Mr. J. Harris Stone relative to exhibition of 200 slides before the London Camera Club on May 10th, and that they would shortly be shipped to this country. Each slide was numbered, and a book containing a description of each was to accompany the box.

The appointment of Mr. Richard H. Lawrence on the Lantern Slide Committee was announced.

Mr. BEACH—I would state that since the last meeting, May 21st, we have received three lantern slides, which have been presented to the Society by Mr. Edward P. Gray, of San Francisco, Cal.; and, as an addition to our library, Mr. Rich has kindly presented us with a number of foreign periodicals, which will be quite an acquisition. We have labored very hard to get the room in order. So far about seven hundred dollars have been expended, and we want to get about five hundred more, so as to have everything as complete as originally wished, and any member who is liberally disposed toward the society is perfectly at liberty to donate whatever amount he may wish to.

The next matter of interest on the programme to-night will be a few remarks by Professor Laudy, of Columbia College, on a method of generating oxygen gas as fast as you use it; and his remarks will be accompanied by some illustrations on the screen of views in Switzerland, the three slides which I have received from Mr. Gray, and a few slides brought by Mr. Newton.

Dr. Laudy will now take the stand.

Dr. LAUDY—It would hardly interest you for me to give in detail the different methods of preparing oxygen. That this subject has invited a great deal of close and careful attention for a great many years is a well known fact, and that we are surrounded and live at the bottom of a great aerial ocean one-fifth of which is oxygen, it seems it would be possible and practicable to get the oxygen from the air; but for a practical source of supply of oxygen at the present time we are obliged to resort to one of the many salts which will yield it up at a moderate temperature.

Efforts to obtain oxygen from the air were made partially successful in this city at one time by the process of Tessie Du Motay, but for certain reasons and circumstances this was

a failure, and curiously enough we have to confine ourselves to one chemical compound, which is the only practical and commercial salt which can be made to give up its oxygen at a moderately low temperature, and that is the chlorate of potassium, which, when heated, breaks up into chloride of potassium and oxygen.

If the chlorate of potassium is heated alone, we find that the chemical action is much too rapid, and we are obliged to mix some granular material with it. In practice some black oxide of manganese, in the proportion of three of chlorate to one of manganese by weight, is used.

The first mention I find of the production of oxygen at the time of consumption was by Mr. Noton, an Englishman. He suggested the use of a mixture of chlorate of potassium and manganese, which was made into a plastic mass or plugs, placed in a number of small retorts, and by heating one at a time a small quantity of the gas was disengaged at the time of consumption.

The apparatus designed by Mr. Noton has been modified, and is now offered for sale by Mr. Chadwick, of Manchester. This apparatus has some disadvantages. Its size, together with its cost, and its being "entirely English you know," of course precludes its use in this country. (Laughter.)

In looking further into the literature on this subject, I found an article, written in 1870, by Dr. Andrew Smith, in which he prepared oxygen gas by heating the mixture in long metal or tin tubes, which are heated either by a Bunsen burner or spirit lamp, heating only a small portion of the tube at a time. The apparatus as designed by Dr. Smith was manufactured by Mr. Beseler, and sold to physicians.

There is no doubt that Dr. Andrew Smith is entitled to the credit for the first suggestion of heating oxygen mixture in metallic tubes. The apparatus which I have the pleasure to exhibit to you this evening is not altogether original; it is rather a correlation of ideas, which I have reduced to what I consider a practical form, for the production of oxygen at time of consumption. How well I have succeeded you can better judge after seeing the apparatus in operation. It consists essentially of a gas-holder which has an inside hollow drum, a metal tube for heating the oxygen mixture, and a blow-through jet.

The metal tube has a tapering plug which has a delivery tube through its center. This plug is pushed into the metal tube and the



whole is gas-tight. The gas-holder and plug are of my own design.

The apparatus that I now exhibit is manufactured by E. & H. T. Anthony & Co., a description of which was published in the BULLETIN, and all of you no doubt have seen it. [See BULLETIN, page 295.]

I will now proceed to put the apparatus in operation, and by means of the lantern project a few pictures that you may judge of the intensity of the light.

The lights were turned down and the apparatus was started. In the course of three or four minutes sufficient oxygen gas had been generated to put the light in operation. First it was shown before being placed in the lantern, Professor Laudy remarking that the jet tubes were constructed specially for this light by Messrs. Anthony & Co. The quiet working of the light and its extreme safety were its prominent features. A series of slides of Swiss glaciers (Levy slides) were thrown on the screen, Mr. Beach putting them through. Then, after an interval, followed several beautiful pictures on the Bronx River near Williamsbridge, taken by Mr. Newton. All of his slides had been developed with pyro; the special formula used is given below. During the manipulation of the lantern, the President asked Professor Laudy if the use of the apparatus was not confined to cities or localities where there was a supply of ordinary gas, to which he replied in the affirmative, but remarked that it was adapted for use in isolated private residences supplied with gasoline gas. In case the gas is generated faster than it can be used, thereby raising the gasometer to its extreme height, no danger is incurred, since the surplus will pass out through perforations at the bottom and rise through the water-seal into the air; but by withdrawing the lamp from under the tube at any moment, the generation of the gas will cease. The experiment of filling the gasometer to its full capacity was tried. When full the surplus could be distinctly heard bubbling up through the water.

At the termination of the exhibition Mr. Canfield moved that a special vote of thanks be tendered to Professor Laudy, and that the society approve of his apparatus. This motion was carried unanimously, and with applause.

The President called attention to the safety of the apparatus and to its remarkably quiet working. A weight on the gasometer gave a slight pressure to the gas as it was supplied to the burner.

## THE INTENSITY OF LIME LIGHTS.

Professor Laudy read the following table of the relative illuminating power of oxy-hydrogen lights:

Authority.	Jet.	Candle-power.
Chadwick.	Oxy-calcium .....	125
	Blow-through .....	208
	Oxy-hydrogen .....	430
E. G. Wood.	Oxy-calcium .....	180
	Blow-through .....	190
	Oxy-hydrogen .....	420
A. E. Dolbear.	Marcy lamp .....	25
	Magnesium lamp .....	40
	Oxy-calcium .....	100
L. H. Laudy.	Oxy-calcium .....	125
	Oxy-hydrogen .....	594 to 660
	Used a Sugg bat-wing burner giving 22-candle power as a standard, at one-half inch pressure, using five feet of gas per hour.	

The above is given to show the difference by different experimenters. Chadwick, Wood and Laudy do not vary materially.

Mr. NEWTON then explained at some length his recent experience with developers, and spoke substantially as follows.

A modification of the potash developer which I have lately adopted, gives me better results than with formula previously used. I have left out the yellow prussiate of potash, and now advise the use of the following formula.

Each solid ounce contains 480 grains.

### No. 1.

Carbonate of soda (crystals) ..	3 ounces.
Carbonate of potash .....	3 "
Sulphite of soda (crystals) ....	3 "
Water .....	32 "

### No. 2.

Sulphite of soda (crystals) ....	3 ounces.
Water .....	32 "

For a properly exposed plate, one ounce of developer is made up as follows:

No. 1 .....	1 dram.
No. 2 .....	7 drams.
Dry pyrogallic acid .....	2½ grains.

In case the plate is greatly under-exposed, the quantity of No. 1 can be increased a dram at a time to as high as six drams with safety, until the image is developed. By using

dry pyro the intensity will gain as fast as the detail is brought out.

I have been through the experiment again with the use of the pyro in solution, for the last few weeks, but I have come to the same conclusion as formerly, that it is better to use it dry, although you can get good negatives from pyro in solution if used immediately, but if allowed to stand for any great length of time you cannot get as good results as if you do not use it in solution. If, in my experiments, I compared negatives made from the use of pyro dry and pyro in solution, I found that the pyro when added dry gave uniformly the better results.

This developer can be used repeatedly. If you have a dozen of exposed plates, say  $6\frac{1}{2}$  x  $8\frac{1}{2}$ , make up six ounces of this developer, and you can develop them all with it one after the other, and the last will be as good as the first. This quality in a developer gives it great advantage in economizing both time and material.

I should state that for some plates it will be well to add from three to six grains of dry pyro to the ounce in order to obtain good density, particularly if the exposure has been extremely short.

Mr. BEACH—Dr. Janeway has handed me an albumen photograph which has been polished in a different way from the ordinary plan.

Dr. JANEWAY—I wish to present to the society a wrinkle given me by a friend, also a member of the society. You will notice that this print has a very fine gloss, and this is produced simply by taking the print out of the washing tray and squeegeeing it on a marble-top table. When the print is dry it remains flat. This one is a little crooked on account of being in proximity with my heated body. It was printed on ready sensitized paper eight months old, and the printing, toning, washing and drying occupied but a few minutes less than one hour. After fixing, it was treated with the alum bath.

Mr. BEACH—While on this subject, I would like to say that I read a few days ago that it is possible to get a gloss on gelatine prints with the ordinary ferrotype plate. I have prints here about a year old, and simply moistened them and placed them on a tin-plate, and you see the result. [He pulled the prints off from the varnished side of the plates and passed them around.] The reason I have brought this matter up is that some time ago we had quite a discussion in regard to the use of hand-finished vulcanized rubber, which was

so hard to obtain, so I saw the suggestion of using the ferrotype plate, and I find that it works very well, and that the pictures strip off as easily as when on rubber.

Mr. Beach then exhibited an improved camera for instantaneous work invented and patented by Messrs. Richard A. Anthony and W. H. Lewis. It is arranged to take  $3\frac{1}{4}$  x  $4\frac{1}{4}$  plates. The working parts are secured to a neat, light mahogany box, the latter being adapted to fit snugly into an outer box, handsomely covered with leather, made to imitate an ordinary hand satchel, with a strap to go over the shoulder. It is called on this account a "satchel camera." The mahogany box is covered on all sides by the satchel except at the bottom. Here is arranged a lever for regulating the focus, a pull rod to set the shutter, a release, a device for holding the shutter open for a time exposure, and a special diaphragm plate. The leather box has a hinged door on the end in front of the lens, which is easily opened when the picture is to be taken. There is also a finder nicely concealed in one side of the box. A ground glass pushed forward by a spring against the back is also provided for focusing, and is slipped back when the plate holder is inserted.

An extension on the rear of the box provides room to carry extra plate holders, and in the side of the mahogany box is a door, which permits the space between the lens and ground glass to be used for storing plate holders when the camera is not in use. The mahogany box can be removed from the satchel cover and used on a tripod like an ordinary camera.

The neat appearance of the satchel, and the excellent workmanship displayed in the fitting up and the finish of the working parts, elicited favorable comment from all who examined it.

Shortly after ten o'clock the meeting terminated.

#### SPECIAL MEETING, JUNE 22, 1886.

A SPECIAL MEETING of the society was held on the evening of June 22d, at 8.20, at the new quarters, 122 West Thirty-sixth street, and, despite the stormy weather, was attended by a number of ladies. Prior to the exhibition, the President announced that a field excursion up the Croton Valley, near Sing Sing, N. Y., by carriage, would take place some time between the 1st and middle of July, and invited members to join. It was desired to get up a party of six or eight.



Upon Tuesday, Thursday and Friday evenings some one would be at the rooms to admit members not having keys. Other nights a member of one of the committees would probably be there.

A synopsis of the minutes of the previous meeting was then read by the Secretary and adopted, and was followed by communications, one a letter by Mr. George Davidson, Secretary of the London Camera Club, relative to the shipment of 200 slides to this society. In closing, he writes: "I might take this opportunity of telling you that any amateurs visiting England for the exhibition (of photographs), or any purpose, will be very welcome, and be made free of the club during their stay. Make this known when and wherever convenient."

Then a letter from Mr. Redfield was read as follows, also the rules relating to exhibitions.

THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA,

June 18, 1886.

FREDERICK C. BEACH, Esq.,

*President Society of Amateur Photographers of New York.*

DEAR SIR,—Herewith I hand you a copy of the rules proposed by our committee for the joint exhibition project.

The rules proposed by the Boston Committee differ materially from ours, and no doubt yours will differ from both. It will therefore probably be necessary for us to all come together in New York some time soon, to talk the matter over, unless our differences are so great that agreement will be impossible.

The real interests of the three societies are so nearly identical, however, that I think there is strong reason to hope that we can come to a satisfactory decision without any great difficulty.

If you think such a meeting desirable, please confer with the Boston Committee, and fix such day as will suit us all.

Very truly yours,

ROBERT S. REDFIELD,

*Secretary.*

The Rules were then read by the Secretary.

The *President* announced a number of donations to the library as having been received since the meeting of June 8th.

The Secretary was instructed to send a letter of thanks to the respective parties for their donations.

The following gentlemen were announced as having been elected active members on June 16th: A. H. Deane, E. N. Dickerson, Jr., Wm.

M. Frisbie; associate member: Lieut C. L. Bruns, U. S. N.

Mr. Beach then urged members to contribute slides for the club exchange, stating that they would be shortly sent to England.

The lights were now turned down and a lantern exhibition took place. The lantern was located in the front part of the library-room, arranged so as to project the image about six feet square upon a tracing-paper screen secured to a wood frame, the latter being suspended from the ceiling and located just outside of the folding doors separating the library from the meeting-room. The audience seated in the meeting-room viewed the pictures by transmitted light.

The effect was quite pleasing, inasmuch as the pictures were rendered more stereoscopic, and no light was lost by reflection.

Mr. Beach operated the lantern and was assisted by Mr. Richard H. Lawrence. Dr. P. H. Mason announced the title of the pictures as they appeared. Thus systematized, the exhibition went along very smoothly.

The first series of pictures included seventy-five slides sent by the Philadelphia Amateur Photographic Club, contributed for the club exchange abroad, and were very favorably received. Among those which won favor on account of their good qualities and artistic merits were: "The Old Mill" at Agoritz, Pa.; several views in Florida; "Wissahickon Valley, Green Bridge, Philadelphia;" architectural views of "Branch of Philadelphia Public Library;" "Unitarian Church, Chestnut street, Philadelphia." North Carolina views, entitled: "Near Royal George;" "Picturesque Home in North Carolina;" "Mountain Home in Western North Carolina;" "Mountain Team;" "Little Minoreau Girl;" St. Augustine, Florida; "In the Woods."

Ten slides contributed by Mr. Edward Leaming were then shown, among the prettiest of which were "Kaaterskill Falls," Catskill Mountains, 300 feet high, and "A Shaded Walk." The sunlight and shadow effect in the latter view was specially pleasing.

Following these were sixty slides presented to the society by Mr. Frederick J. York, of London, and were from negatives made by him when in this country about a year and a half ago.

The views were mostly in New York City, Niagara and Canada. They exhibited excellent judgment in the skill of the maker, both in his choice of position and the effective use of his instrument under difficult circumstances. The titles of those which were most admired



were: "House of Parliament and Grounds, Quebec," "Panoramic view of Niagara Falls," "American Falls from Canadian side in summer and winter," "Barge Office, New York," "Castle Garden," "Produce Exchange," "Mills Building" "Wall street," "Sub-Treasury Building," "Stock Exchange," "Broadway from the Post Office," "The Tombs," "Elevated Railway and Cooper Institute," "Fifth Avenue," "Union League Club," "Vanderbilt Mansions," "Columbia College," "The Lake, Central Park," "The Terrace," "Egyptian Obelisk," "High Bridge," "Oyster Market," "Interior of a Hudson River Steamer," "Brooklyn Bridge, Footway."

After these came a view of the 1886 St. Paul Ice Palace, presented by Mr. C. A. Hoffman, of Minneapolis; and two views presented by Mr. Edward P. Gray, of San Francisco, entitled: "Country Road," and "Lumber Mill," near Howards, California. The former was very favorably received.

The last picture was of a beautifully engraved clear quartz, having the design of the "Finding of Moses" cut in its surface. The original disk was nine inches in diameter and half an inch thick, and was said to be very valuable.

The slide was made by Mr. Beach, developed with potash and pyro, but afterwards slightly intensified with Monckhoven's cyanide and mercury intensifier for the purpose of changing the color from a greenish-brown to a purple hue. The effect on the screen was quite pleasing.

In connection with Mr. York's views of Niagara, it should be stated that the water effects were remarkably good, but in order to obtain clear skies the negatives had been delicately blocked out. The water was somewhat black and white in places, and not as delicate in tone as in views shown by Mr. Brush made on gelatine plates. Mr. York's collection will furnish a good beginning for the large collection of slides it is the purpose of the officers to establish.

Shortly before 10 o'clock the exhibition terminated. Informal meetings are to be held in July and August. The first regular meeting occurs on September 14th.

#### FIELD EXCURSION.

THE first summer field excursion, under the leadership of President Beach, occurred July 22d. The route taken included the pretty bits of scenery to be found along the Croton River from Sing Sing to Croton Lake.

The party started in the morning by rail

from the Grand Central Depot to Sing Sing, N. Y.; thence to Croton Lake by carriage, continuing on until the Harlem Railroad was reached at Mount Kisco. From there the return to the city was by the Harlem Railroad.

The drive across country from Sing Sing was particularly delightful, while the variety in the hills, foliage, running streams crossed by quaint bridges, furnished abundant material for the photographer to capture.

The trip was longer than necessary; one entire day might be spent near Sing Sing in photographing the high, cliff-like shores, interspersed with old trees, of the Croton River at that point. The river is a favorite place for rowing parties, which adds picturesqueness to the spot.

The excursion proved to be most enjoyable to those who took part.

### THE PHOTOGRAPHERS' ASSOCIATION OF AMERICA.

#### *Third Day—Continued.*

MR. MOTES—*Mr. Chairman:* We found it almost impossible to select so large a number from this body from the different States, having no regular roll of members, and we thought it was best to recommend that the association elect the list, giving the Executive Committee power to make such changes as are found necessary in case of those who have been dropped out.

On motion of Dr. Elliott, this recommendation was adopted.

On motion the Secretary was instructed to cast the vote of the association for Vice-Presidents with this limitation.

The vote was then cast.

*The President*—Is Mr. Cramer present?

MR. JOSHUA SMITH—He is here.

Mr. Cramer then stepped forward.

MR. CRAMER—*Mr. President, and Ladies and Gentlemen:* The news has been brought to me that you have chosen me for your President, which is an utter surprise to me—as much a surprise as the one which was given to me yesterday afternoon by the presentation of this nice gold cane, which has an inscription upon it "from your friends." It seems that I have more friends than I expected, and I must tell you that although I appreciate the honor you have bestowed upon me, I have not wanted the office, and have told my friends to please withdraw my name; that my time is all taken up by a great many things; and furthermore, I did not want it to appear as if I acted from a desire to get the office from any private

interests of my own. I wanted to stand above suspicion, and if there is one man who objects to my nomination, I will not have it.

Mr. CLARKE—Your election was unanimous.

Mr. CRAMER—If it was made unanimous, I think I will have to accept it. (Applause).

Three cheers and a tiger were then given for Mr. Cramer.

Mr. CRAMER—I can only say one more word, and it is this: I don't know why you have chosen me for this high honor. I am not a good speaker, I am not perfectly posted in parliamentary rules and all that sort of thing.

A MEMBER—You are a real good man.

Mr. CRAMER—I have the interest of the association at heart and shall do everything in my power to encourage it and to sustain it, and I hope that you will all work with me to keep it alive and keep it going. I thank you again for the honor.

The *President*—The next place of meeting recommended by the committee is Chicago.

On motion, Chicago was decided to be the next place of meeting for the association.

On motion, the association adjourned, to meet Friday morning, June 25th, at 9 A.M.

#### *Fourth Day.*

ST. LOUIS, June 25, 1886.

The *President*—The Convention will come to order.

The committee appointed to report on the award offered by the Acme Burnishing Company, of New York—26-inch burnisher for the largest display in the convention—have awarded it to F. W. Guerin, St. Louis.

The Committee on the Anthony Prizes report as follows:

Prize for 18 x 22 portrait to Irving Saunders, Alfred Centre, N. Y.; prize for 8 x 10 views to W. E. Purviance, New York; prize for cabinets, to G. M. Elton, Palmyra, N. Y.

C. T. STUART,

DAVID COOPER,

A. G. BECKWITH,

*Committee.*

I am sorry the ladies are not present, but we cannot wait. I will read the following tribute of respect to the memory of John A. Scholten.

#### *In Memoriam.*

JOHN A. SCHOLTEN.

At rest from the wearying strife,  
To focus the aims of this mortal life;  
Condensing to actinic ray  
The murky gleams of vanishing light  
To translucent beams of dazzling white  
In the dawn of eternity's day.

Where to mortal ken appears,  
No trace save the dew of the tears,  
Is the latent image purified;  
And the face we have missed,  
'Mid the heavenly group forever fixed,  
Lives in joy with the crucified.

MARY NOLAN.

ST. LOUIS, June 23, 1886.

On motion of Mrs. McMichael, a vote of thanks was tendered to Mary Nolan for the tribute.

The *President*—Reports of committees are now in order.

Mr. Ryder is not present; he is on a Committee of Amendments to the Constitution and By-Laws. I believe unfinished business is the next in order. Mr. Cooper's subject was unfinished.

Mr. COOPER—*Mr. President*: I move that a vote of the members present be taken as to whether I shall continue my paper or not. My object in introducing the paper was a desire to impart practical information to photographers who may not be familiar with the subject. It is a subject which may be dry to those who do not understand it or who do not care about it, and if they leave the hall and interest themselves in the pictures displayed, and occupy themselves in that way in the meantime, I shall not object. My object is to ascertain whether the members present desire that I shall continue my remarks or let the association pass on to some other business. I have no desire to obstruct the business of the meeting, my only desire being to obtain the sense of the members, and that is the reason why I make the motion.

The *President*—There is no necessity of putting the motion in the first place; in the second place it is entirely unnecessary, as the best part of Mr. Cooper's talk is to come. Now we are here we should have the paper. We will hear from Mr. Cooper.

*(To be continued.)*

## **What Our Friends Would Like to Know.**

Q.—READER writes:—Can you answer me one or two questions? Is there an amateur photographers association in Newark, N. J.? Will the oxalate developer work well on the Seed plate?

A.—We do not know of any society of amateur photographers in Newark, N. J. We have not used the oxalate developer on the



Seed plate, but do not see any reason why it should not work. The oxalate developer will work on any good dry plate, provided that the exposure has not been under-timed.

Q.—R. J. D. writes:—Will you be kind enough to tell me where I can get the best and most thorough book on retouching?

A.—Our publishers issue a book on this subject, entitled "The Art of Retouching," by J. P. Ourdan, which is the best work of the kind we know of.

Q.—C. H. S. writes:—Please tell me how you get a print like that upon page 8 of "How to Photograph Microscopic Objects," issued by E. & H. T. Anthony & Co., and who does that kind of work?

A.—The print you refer to is from what is called a photo-mechanical block in type metal, and work of this character can be best done by the process of Mr. Fred. E. Ives, 907 Filbert street, Philadelphia.

Q.—E. C. writes:—Please inform me, through the columns of the BULLETIN, the most convenient way of drying prints after toning and fixing? How can you prevent the curling up of the edge of the paper, and how can you make them smooth again?

A.—If you are going to mount the prints on cards, it is best to paste them while moist, without waiting for them to dry. Of course they must be trimmed after printing, and before toning and fixing. If your prints have curled up in drying, run them through a burnisher, together with a piece of card against their backs.

Q.—H. M. R. writes:—Suppose you procure a small box, 2 inches in diameter, and  $\frac{3}{4}$  inch from cover to bottom. You then punch a hole in the cover of the box, and paste over this hole some foil, which may be obtained in any dry goods store (fancy buttons are sometimes strung upon it). Then, with a No. 10 needle, you prick a small hole in center of foil, so that, if the finger be placed on the opposite side, you may just feel prick of pin. Paint inside of box black. Cut a piece of Eastman's A bromide paper so that it will just fit bottom of box inside (of course the bromide paper must not be exposed to white light, and you will have to make a small cap to place over pin-hole). Upon removing cap, you expose 4 minutes, at a distance of 10 feet from object. The exposure having been made, develop with oxalate developer, and to make transparent, so as to adapt it for printing, use castor oil. Now how would you print pictures that had been taken in this manner? Would

also like to know whether there is any quicker paper of the kind that would take less exposure.

A.—A negative taken in the manner you speak of can be obtained. We have seen an 8 x 10 print from a negative taken in this way, using a pin-hole in the front of a camera-box; but these pictures appear to lack sharpness. The manner of obtaining prints from paper negatives is almost the same as in the case of glass negatives. A full description of the *modus operandi* is too lengthy for this column, and we must refer you to "How to Make Photographs," issued by our publishers. The Eastman negative paper is quicker than the A permanent bromide paper which you speak of. The A paper is not intended for making negatives.

Q.—F. D. writes:—Will you please answer the following in the BULLETIN. Is collodion for enameling prepared different from that used for other purposes? What book on chemistry would be best for a photographer? How many grains of silver nitrate would 100 grains of silver make? Could a rectilinear lens be used for portraits to advantage?

A.—Collodion for enameling is made specially for the purpose from a tough variety of gun cotton, and the solution is stronger than the ordinary varieties used for negatives. The best small book on photographic chemistry is the "Elementary Treatise on Photographic Chemistry," by Arnold Spiller, issued by our publishers. If you need more than this you had better get a book on general chemistry, such as Watts' Manual of Chemistry, and study those parts that pertain to photographic materials. One hundred grains of metallic silver should give 149 grains of silver nitrate theoretically, but practically this quantity is not obtained, and perhaps only 130 grains of the crystals would be secured from 100 grains of the metal. A rapid rectilinear lens could be used for portrait work, but not a wide-angle lens; the latter distorts too much.

Q.—J. F. L. writes:—Will the BULLETIN please give briefly the theory of the development of dry plates? I also ask for the experience of some one who has been successful in working the argentic positive plates?

A.—The theory of the development of dry plates is, briefly, that light, acting upon the silver compound suspended in the gelatine, leaves it in such a condition that deoxidising agents, such as pyrogallol or ferrous oxalate, are capable of reducing such silver compound



to the metallic state. In regard to the argentic positive plates, personally we have had no experience with them. May be some of our readers can help J. F. L.

Q.—W. B. C. writes:—1. What progress (if any) has been made in the endeavor to photograph in colors? 2. What did Dr. H. W. Vogel discover with reference to the principle of making silver bromide sensitive to all colors? (See BULLETIN April 25, 1885, page 226.) 3. What are the probabilities of successful work in this direction? 4. Can you refer me to any authority on this matter?

A.—In answer to your first question we will refer you to last year's BULLETIN, pages 1, 97, 225, 353 and 385, where you will find a *résumé* of about all the knowledge that has been obtained upon the subject. Dr. Vogel's discovery was, that certain materials, such as eosine, azalin, etc., added to the emulsion, make bromide of silver sensitive to red and orange rays; while without these additions it was only sensitive to the green, blue, and violet rays. The field of photography in natural colors is almost unbroken ground, and is waiting for workers to enter it and reap a rich harvest. We do not know any work that treats of the subject exclusively.

## Views Caught with the Drop Shutter.

GAYTON A. DOUGLASS & Co., of Chicago, send us a notice of the grand excursion of the Photographic Society of Chicago, held August 3d. The trip was over the Illinois Central Railroad to Kankakee, and a steamboat ride up the Kankakee River—a very picturesque trip.

R. H. MORAN, of Centre street, New York, sends us a long bargain list, No. 31, which is worth looking at by those needing apparatus, lenses, etc.

Mr. GEORGE A. AYRES tells us that he sold most of the apparatus in the exhibit of our publishers at St. Louis, and in addition had duplicate orders to be shipped to those who did not get them from the exhibit. The Climax camera for studio work, with the greatly improved Benster holder, embracing the curtain slide, were most in demand. This latter improvement now makes these cameras as good as the best.

A. M. COLLINS, SON & Co., the well-known card manufacturers of Philadelphia, have now become the "A. M. COLLINS MANUFACTURING COMPANY," with Henry M. Collins, President; Edward Cope, Vice-President; and Alfred M. Collins, Secretary and Treasurer.

J. F. RYDER, of Cleveland, was the winner of a gold medal at St. Louis. He has had a *fac-simile* of the medal made, 24 inches in diameter, and its handsome face adorns the window of his studio. The whole affair is very unique; and when the question was asked, "Is it gold?" the reply received was, "Gold! it ought to be; it took three men to hang it."

We are indebted to Messrs. Paul & Shape, of Milwaukee, for a very handsome souvenir volume of the 24th Sængerfest of the North American Sængerbund, held July 21, 1886. It is a large octavo of 110 pages, and finely illustrated. It speaks well for the enterprise and good taste of our Western cousins.

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INDO-TINT.

## MORNING ON THE LAKE (Long Island).

"It was a lovely morning! all was calm,  
As if creation, thankful for repose,  
In renovating beauty, breathed a sigh of calm  
And blessedness around, from slumber rose."—BARTON.

AM. PHOTO-L. CO.



# ANTHONY'S Photographic Bulletin.

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Prof. CHARLES F. CHANDLER, Ph.D., LL.D., *Editor.*

ARTHUR H. ELLIOTT, Ph.D., F.C.S., *Associate Editor.*

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AUGUST 28, 1886.

Vol. XVII.—No. 16.

## THE FOREIGN PICTURES AT THE ST. LOUIS EXHIBITION.

THERE was a greater variety of pictures from abroad to be seen at St. Louis this year than was the case at Buffalo, although the exhibit presented at the latter Convention was anything but a meager one. Both England and Germany were quite well represented, but we failed to see anything from France, Italy, Belgium, Spain or Portugal, countries where much fine photographic work is constantly being done, and from each of which we might learn something suited to the varied phases of photographic art as practiced in this great country. We hope that next year greater efforts will be made to obtain exhibits from the nations mentioned, and that we shall have to notice a more varied display of foreign pictures than has ever been presented at any convention. A little effort at the right time will most assuredly obtain for the association a most interesting series of the best efforts of the leading artists in the photographic circles of Europe.

Now to take note of the grand exhibit we were favored with at St. Louis. As usual, Germany took the lead in the number and quality of its exhibits. There was not a poor picture on the walls at St. Louis that came from a German studio. All were examples of patient, artistic work, and many were marvels of photographic skill.

Fritz Einlender, of Cologne, sent a frame of fifteen handsome prints showing a number of fine studies and beautiful portrait work. Although the pictures were small, they were exceedingly artistic, and excellent studies in photographic art.

Fr. Müller, of Munich, who received the gold medal for the best foreign exhibit of portraits, had a large display of some of the finest portraits ever seen in the United States. Twelve of these pictures were about 18 x 22 inches in size, and were examples of good posing, perfect lighting and fine finish; in fact they were ideal photographic portraits. In addition to these there were a number of German character studies, heads of girls, market and farm women, old men, and those quaint characters that are peculiar to German life. These latter were all as carefully managed in posing, lighting and finish as the larger portraits, although they were only on 8 x 10 plates, and they formed an exceedingly interesting set of pictures.

Loescher & Petsch, of Berlin, sent a number of large studies of groups and portraits, as well as a number of smaller panels and ordinary cabinet pictures. The larger pictures were very fine examples of artistic work. The beautiful effects obtained in the bright sunlight in the case of some of the pictures make them

very interesting as examples of novelties in portraiture. One of the bright "sun pictures" is a musician (a violinist) apparently knocking at a door. The apparent action of walking up two or three steps, the listening pose of the face, seen but a little more than profile, the sharply defined figure, and the clean cut shadows of the shrubbery against the sunlit door, all go to make up a picture of great beauty. Another of these "sun pictures" is a group of a lady and a little boy, the lady in the act of throwing on the wall a shadow of a rabbit formed by interlocking the fingers. The effect of the bright light in this case is very good, and serves to give an exceedingly life-like and interesting picture. This exhibit also contained a number of fine panel pictures, some with the same effects as mentioned above, others ordinary portrait work, but every picture was finely executed and worthy of the highest praise, even down to the cabinet portraits, of which there was quite a good exhibit.

Teich Hanfstangl, of Dresden, had a number of unusually fine examples of his work. A group, 14 x 18, of three little girls, was very well done, graceful, easy posing and excellent lighting being the characteristic features. A three-quarter figure of a lady on a 15 x 22 plate showed excellent posing and much detail in the rich drapery. An 18 x 22 picture of two ladies in dark and light dresses exhibited fine effects in lighting and a wonderfully graceful example of posing, making an altogether fine piece of portraiture. A full-figure picture of a little girl on a 16 x 21 plate was a beautifully soft and life-like piece of work. Another picture on a 14 x 18 plate, a full-figure of a gentleman in court-dress, was a very striking example of photographic work, being sharp and full of fine detail in the costume. There were several other large pictures of much the same character, all remarkable for artistic posing, fine effects in light and shade, and skillful use of the camera. In addition to the large pictures, Hanfstangl also exhibited a number of exceedingly fine examples of small size pictures, from 5 x 8 inches down, all of which were of excellent quality.

Th. Prümm, of Berlin, sent a few examples of his work that made us long to see more. These consisted of one 7 x 12 panel and half a dozen cabinets. The subjects were mostly children and young people, and showed great skill in posing and lighting. Some of the children's pictures were the softest, prettiest portraits we have seen.

Mertens, of Crefeld, exhibited six frames of colored portraits, showing delicate tinting and fine effects in the use of colors.

D. Wettern, of Hamburg, sent eight large frames, six of which were portraits and two were filled with finely mounted cabinet pictures. In the portraits we found two, one of an old lady and the other an old gentleman, that were marvellously fine photographic portraits. It is impossible to describe them; they appeared to us almost perfect. Among the cabinets were a number of excellent examples of children's pictures of the most pleasing character.

Wurthle & Spinnhirm, of Salzburg, sent seven large views, about 18 x 22 inches, of scenes in the following localities: St. Bartholoma am Königsee, Berchtesgaden, Wildbad Gastein, Zell am See, Meran, Obersee, and Gosau-See. These were all remarkably fine views, showing fine effects in mountain scenery, glaciers, exquisite bits of reflection in the lake scenes, and a clearness and fullness of detail we seldom see in such large work. The view of the Obersee showed one of the most striking pictures of reflection effects we have ever seen.

B. Johannes, of Partenkirchen, exhibited ten large views, about 9 x 16 inches, of scenes in the Bavarian Highlands. Here was another exquisite series of pictures by an artist of the first order. Every view was picturesque, and in most of them the tones were of that warm brown character that gives such a natural effect to views of mountain scenery. Some of the scenes presented a wintry aspect, and the wild and rugged effects were very well caught. In some of the pictures we noted some very fine cloud effects that added much to the beauty of the views.

Karl Kesselhuth, of Hildesheim, sent eight fine examples of interior and exterior architectural work, made on about 14 x 17 inch plates. All these were sharp, clear work, the interiors being some of the finest pictures of the kind we have seen, full of detail and wonderfully sharp.

Dr. E. A. Just, of Vienna, sent four frames of examples of work done on various papers made by him—albumen and gelatino-bromide. Unfortunately these were badly damaged during transit from Germany and did not make a very good exhibit. Nevertheless they were interesting; but the gelatino-bromide enlargements cannot compete with those made in this country.

Schultz & Suck, of Karlsruhe, who took the silver medal for the foreign exhibits of portraits, had a fine collection of pictures that well deserved the reward they obtained.

Rudolf Hansa, an amateur, of Vienna, took the silver medal for foreign pictures other than portraits. He had a very fine collection of half-size,  $6\frac{1}{2} \times 8\frac{1}{2}$ , and 8 x 10 views of German scenery that were artistically chosen and well finished.

In addition to those we have mentioned, the following German exhibits may be mentioned as good examples of fine work, but our want of space prevents us from speaking of them in detail: E. Berber, of Hamburg; Franz Werner, Munich; Benque & Kindermann, Hamburg; Tiedemann, Bremen; Karl Wunder, Hanover; August Kamp, Aachen; Pietzner, Toplitz; Van Bosch, Frankfort; Alma Van der Truypen, Stuttgart; H. Hoeffert, Dresden.

We now come to the English exhibits, and one of the best of these was undoubtedly the single picture entitled "Dawn and Sunset," by Mr. H. P. Robinson, of Tunbridge Wells. This picture was about 25 x 30 inches, and represented an aged man sitting by the fireside, his gray head bowed in meditation upon the vista soon to open up to him through the portals of the tomb; on the other side of the fire-place sits a young woman, holding in her arms a playful child whose morning bath has just been completed. As a work of art this picture is full of poetry and imagination.

George West & Sons, of Southsea, who took the gold medal for pictures not portraits, exhibited twenty-two pictures of yachts, about 8 x 10 inches, that were the finest pieces of instantaneous marine photography we have ever seen. It is useless to attempt to describe such pictures; they were examples of the most skillful use of the instantaneous shutter and fine manipulation in both developing and finishing. The pictures were admired by all who saw them, and many of them have been sold since they have been on exhibition in New York.

W. W. Winter, of Derby, England, had an uncommonly fine display of pictures. There were six large studies in frames that were of the highest order of photographic work. Two excellent composition pictures in this exhibit attracted many observers. One of these was entitled "The Poet and his Victim," and represented a scene in a library where one old gentleman sitting at the table is



enthusiastically reading a book of poems to his aged friend, who is nodding in a chair by the fire-side. The idea is very well carried out, and the picture is exceedingly life-like. The other composition was called "Home Rule; or, the Undecided Voter." This represents a workman sitting at a meal and reading a political circular, while he thoughtfully rubs his head. This picture also is full of life, character, and artistic taste.

Ernest C. Bowker, Nantwich, England, contributed seven large views of work of the highest order. These were frost and snow scenes on the River Weaver, and some interiors of Nantwich Church. The winter scenes were excellent, and the church interiors were uncommonly fine.

We have thus given our readers an idea of the extent and variety of the foreign pictures shown at St. Louis. Want of space has compelled us to be very brief in many cases; but the scope of the exhibition was such that only those who saw it can fully realize the grand display made and the many lessons to be learned in observing it.

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#### EDITORIAL NOTES.

THE September number of the *Century* will have a very interesting article upon "Balloon Experiences of a Timid Photographer," by John G. Doughty, who accompanied Mr. A. E. Moore, of Winsted, Conn., on several of his trips. The article is to be illustrated with pictures taken from Mr. Doughty's views, and will be especially interesting to photographers.

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AMONG our reports in this issue of the BULLETIN, we give an account of the conditions of the competition for medals at the exhibition of the Photographic Society of Great Britain to be held in October and November next. We note among the list of judges the name of our good friend J. Traill Taylor, editor of the *British Journal of Photography*.

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IN the last issue that we have received of the *Photographische Correspondenz*, we find an excellent example of photo-mechanical printing in colors. This is a reproduction of an oil painting of a pretty little girl, by Brochart, of Paris, dressed in a dark brown hat with a black and white feather, a pale blue lace ruffle over the shoulders, a salmon colored dress of a figured pattern, and a bunch of red and pink roses fixed in the blue lace ruffle in front. This is practically a picture made from gelatine plates used in the same manner as lithographic stones; and in this particular case five different color plates were used to produce an exquisitely soft piece of coloring that has the appearance of a finely colored photograph without its disagreeable glossy surface.

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MR. JOSHUA SMITH, of Chicago, has been making some improvements upon the Eastman roller holder. One of these is a register showing how many exposures have been made upon the roll in the holder, thus indicating how many more pictures can be taken. The other improvement is an ink marker, which draws a line, that can be seen in the dark room, between each exposure.

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THERE is to be a photographic exhibition in Geneva in September, the first of the kind ever organized in Switzerland. This should be a most interesting dis-

play of the photographic art, for the picturesque mountain scenery of that beautiful country is teeming with gems for the camera.

GASTON TISSANDIER and PAUL NADAR have recently taken some instantaneous photographs from a balloon in a voyage from Paris to Mans, and at altitudes of about 2,700 to 3,700 feet. These pictures have been presented to the Academy of Sciences in Paris. The pictures of Versailles and a little village near Mans are said to be very remarkable, being true topographical charts of the country around. The duration of the exposures is given as  $\frac{1}{250}$  of a second.

WE note in a recent number of the *Photographisches Archiv*, a new method for making a red window for the dark room. M. Cassan takes five grams of carmine and dissolves it in forty cubic centimeters of ammonia solution. Two grams of picric acid are dissolved in four hundred and fifty cubic centimeters of water, and seven grams of glycerine are added to it. To the last solution fifty grams of gelatine are added, allowed to soak one hour, and then dissolved in the water-bath. As soon as the gelatine is dissolved, the carmine solution is added to the mixture, and the whole placed on the water-bath to keep warm. This mixture is now applied to an ordinary window pane with a wide brush. As soon as the first coat is dry, a second or third one can be applied until the desired density is obtained.

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### AN ETCHER'S OUTING.

BY C. F. MILLSPAUGH, M.D.

SEEKING freedom, rest, and recreation from city life, our etcher left New York on the 20th of June, met our amateur at Deposit, N. Y., and started down the Delaware River on a voyage for negatives. Their equipment consisted of a canvas canoe, fitted with a zinc water-tight compartment in the stern, a paddle, camera and fittings, needle and thread, bees-wax and oil, and excellent health. They had filled their three double holders before starting, and carried in their original boxes the balance of two dozen plates. A Tisdell lamp and a dust brush completed their outfit. Their account of the trip is as follows :

Launching our frail craft upon the low waters of the West Branch, we bade adieu to the natives who had gathered on the bank, and gaily paddled over our first rift, speeding along, dodging stones and village *debris*, we passed the turnpike bridge and—sprung a leak! A tin tomato can, resting peacefully upon the bottom of the shallow, had cut a two-inch slit just under the amateur's cushion. Shore was rapidly made, a few stitches, a daub of bees-wax, and away we sped along a beautiful still-water reach of nearly a mile. At the end of this stretch, stones were piled from each shore V-shaped down the river. This formation, known as an eel-rack, had an opening about four feet wide at the point of the V, and through it we sped at an exhilarating rate, and, tumbling over the rocks below, ran right side uppermost into the calm water beyond. This was our first shoot, and the enjoyment and excitement of the few seconds employed was superb. At the end of this still water, numerous islands appeared, and the runs in and out between them gave us two fine negatives, with delicious foregrounds of sedge, stones and scrub-willows; mid-distances of elms and sycamores; and horizons broken by knolls and chestnuts. Our etcher, with his artistic eye, set

the ground glass in such a manner that the horizon combined with the mid-distance always formed cone-shaped lines of beauty, carefully balanced and opposed by other cones; adjusted the true foreground point of interest carefully out of the center of the picture; and managed to bring in little points of sedge, drift-wood, or other "sharps" just where they would enhance and not despoil. A day of beauty surrounded us. A soft white light spread over the landscapes and waterscapes; not a breath of air stirred our object trees; and flitting cloud shadows broke through our distances in a most bewitching manner; all combining to make a photographic day of regal munificence. Twenty miles of rift, still water, eel-racks and dams brought us to the Hancock Falls, which we shot like a rocket, exclaiming the while in exuberance of health and enjoyment, reaching the end of our first great tumble without an ounce of shipped water in our doughty craft. Landing at the suspension bridge spanning the river at Hancock, the toll-gate keeper housed our boat and duffle, while we sought the hotel and enjoyed such a supper as hungry voyagers only can enjoy. In the darkness of our room that night we opened the half-dozen box, took out the unexposed plates by the aid of the Tisdell, returned the exposed plates to the box, carefully guarded them with the separators, dusted six more plates, refilled the holders, and adjusting all with stout rubber bands we relighted the hotel lamp, revised our notes, and sought sound sleep and the restful peace granted us through our day's exercise.

The morn of the second day opened fair, and so like the first that the two might be merged without contrast. Sallying forth, we caught a fine old homestead, with a magnificent oak for the point of sight, and at the back of this another view of a most picturesque group of out-buildings, a pig-stye, corn-crib, and tool-house, all set at different angles, and no two boards alike on any; the foreground, an old stone-fence with slab-gateway, and a sycamore to break up the horizon.

In order that we might set out again with full holders, we visited a photograph "gallery" in the village and asked the favor of using the dark room. The gallery was a lean-to of an ice-cream saloon run by the artist, and consisted of unplanned hemlock boards battened with laths, in which the dust and trimmings of prints for the last two years or more, greeted the sitter on entering. The "dark" room had a pane of orange glass 8 x 8 set in on the east side, and cracks in the walls through which one could put all the fingers of each hand. The amateur stuffed the cracks with the etcher, and, getting behind some dirty barrels of waste, managed with many misgivings to fill the exposed holder and pack away.

At one o'clock the voyage was again taken up, and over rapids and dams we paddled until several sharp, buried stones, a falls and an eel-rack sent us again to shore with over twenty cuts in the boat's skin. Numerous stitches, plentiful bees-wax, an ointment, and off we go, waxed to such extent that no stone could cut us again; in fact the etcher thought we might shoot a gravel bank without lessening our speed, so greased were we. From here on the grandest scenery met our view, long stretches of deep water reflecting Claude Lorraines of mountains, the details of which were far more discernible than in the mountains themselves, past half-buried boulders, between grand old rocks, through rushing sluices and peaceful swirls, until our exclamations of delight could no longer be new ones—our vocabularies were exhausted. A sequestered nook, with an old saw-mill long before hushed in silence since its more modern neighbor com-



menced to vomit dark smoke from its high, stiff, unpicturesque smoke-stack, imprinted itself forever upon a gelatine film (if we washed out all the hypo). A graceful elm, rising in stately majesty from the foreground to far above the horizon, found like immortality. An immense rocky bar that seemed to effectually end our voyage gave two beautiful negatives, in one of which—in the mid-distance—a grazing cow held her dewy lips to the rich pasturage for just one second. The setting sun, glinting along the mid-distance trees and tipping their summits with old gold, after one second longer exposure in deference to the dying day, proved to make a pretty bit of landscape for the etcher's winter work. Then the mountains reflected their laurel and rhododendrons in a most beautiful calm stretch for over two miles, while the amateur noiselessly and regularly dipped his paddle, and the etcher dreamily gazed on one of the most peaceful, resting, glorious bits of river that beautifies God's fair earth. The long evening shadows; the mirror-like calm of the deep river; the rich, dark, olive-green mountain-sides and their richer counterparts upon the water's face; the dreamy quiet of the evening as the sun sank slowly in the West, was a period that no turmoil, strife or sadness can ever blot from the remembrances of that favored pair. The quaint little Dutch town of Equimunk was reached at eight in the evening and a hearty supper enjoyed. The next day was spent at the village and was as favorable as the other two, a trio of days such as may never again be enjoyed with the same light, same lack of wind, and clearest of atmospheres, but will forever form a bright oasis in the busy life of the doctor and the artist.

On reaching home, and the seclusion of a dark room that was *dark*, an afternoon was spent in developing with pyro and potash our twenty "takes." The amateur had had only two months' practice, but he secured from the twenty exposures twenty fine negatives. The exposures were all slightly too long, but, thanks to the restraining power of bromide of potash, they were held down to detail, softness, depth, and good printing quality.

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### THE POSTAL PHOTOGRAPHIC CLUB.

WE have recently seen the last album of this club, and although we note considerable progress among some of its more recent members, we don't think it is a good set of examples of the club's work. We believe this is principally due to the use of poor lenses and the ill-use of some good ones. There are fifty prints in the album varying from about  $1\frac{1}{2} \times 2$  inches to  $6\frac{1}{2} \times 8\frac{1}{2}$  in size. A few of these are quite artistic in composition, but poor in either the prints or the negative.

The "Girl with Spinning Wheel," by Miss Salter, is a very artistic study, but of a rather dead tone in the printing. The interior of Fire Engine House at Newton Centre, Mass., by J. Albert Cole, is very good and quite sharp. "Old Water Mill," by Wadsworth, is full of detail, but not as sharp as it ought to be. "A Quiet Spot," by Jackson, is in our estimation the best photograph in the album, but the subject is uninteresting. We cannot see the beauty of a picture with a few rail-fences, some bushes, and a small patch of bare grass in the center. We look in vain for artistic feeling in this picture. "Don't," by E. H. Johnson, is a capital piece of composition. It is a dentist's office, where the operator is in the act of drawing a tooth. The idea of the picture is well carried out, and only lacks detail in the shadows to make it an excellent study. Dr. Max Mueller

has several excellent "Meadow Scenes" that are particularly artistic. These are pictures of hay-fields in which ox-teams are loading or drawing hay, and are very picturesque. The only fault we can find with them is that they are not sharp enough. Mr. John E. Dumont has several charming bits of artistic work, but not up to what he can do in fine photography. "Sunset" on Lake Michigan is good; "Old Bridge at Leeds, N. Y.," is a charming bit of reflection work, the stone arches producing a very artistic effect; but we think we have seen a better print from this same negative. "Stranded on Windsor Beach," is one of the best pictures in the album; the picturesque old sailing vessel, the cloud effects, and the curling surf, all go to make up a truly artistic work. But all these pictures lack the brilliancy we are accustomed to see in Mr. Dumont's work. "The Falls of Black River," by Miss Smith, is a little gem. It is very tastefully printed with a half-tone border, is full of fine detail, and the point of view chosen makes a very pretty picture. "On the Edgeworth Road," by Jackson, is a good print of a pretty scene, and full of detail. "A Foggy Morning," also by Jackson, is soft, artistic and very picturesque.

Altogether the album is not uninteresting, but we know that better work can be done by the members of the club, and expect to see some in the next set of pictures sent out. We think some of the older members of the club are not doing their share of work; but this is perhaps owing to the fact that in summer time they are getting negatives rather than making and finishing prints, and it would doubtless be better not to send out albums in July and August. Mr. Jackson deserves praise for getting together the pictures in this album, which were collected with considerable difficulty. A large number of his own pictures fill up what would otherwise be blank pages, and he deserves great credit for many examples of fine work that fill pages that should be occupied with examples of the work of others. To get the album ready for the members is certainly work enough, but to have to contribute a majority of the pictures is asking too much of a good-natured man.

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### THE INTERNATIONAL PHOTOGRAPHIC EXCHANGE.

*To the Editors of the BULLETIN.*

It is very nearly one year since the above exchange went into operation, and the experience gained in that time has led the promoters to somewhat curtail the original plan.

The rules as now revised provide for the exchange of original  $3\frac{1}{4} \times 4\frac{1}{4}$  negatives once a year. The American negatives are sent to Mr. H. Smith, the English manager, in October of each year, and a like number of English negatives are sent to me at the same time from Mr. Smith. American negatives to be sent to England in 1887, are to be collected this fall, and an album comprising prints from them, as well as from the 200 English negatives to be received in October of this year, will be made up and sent for inspection around to the American members, who will be privileged to order copies in the shape of exposed plates, which they can develop into pretty lantern slides at any time at their leisure.

The English negatives will remain in possession of the American branch, and become its permanent property, from which copies can be obtained at any time.

The membership of the American branch is limited to fifty, and it is desired that the present membership of thirty be enlarged, specially with a view of obtaining representatives from various sections of the American continent. By this

means it is hoped that an interesting series of views, embracing a variety of subjects, will eventually be secured. It is further proposed to establish branches in other foreign nations, such as Japan, Australia, Russia, Asia, Germany, India, Sweden, Norway, Switzerland, France, Belgium, Spain, etc., and very probably arrangements will be made, in the future, with responsible amateurs in these countries to take part.

The expense of membership is very small, and in addition members are only obliged to contribute fifteen good negatives once every year. I have associated with me Mr. Richard H. Lawrence, as Secretary and Assistant Manager. It is only necessary to say that he is a member of the New York Society of Amateur Photographers, and is as earnest as myself that the exchange shall become an educating and useful institution. Amateurs throughout the country are invited to join the club. Any communication addressed to me concerning the exchange will receive prompt attention.

F. C. BEACH,

*Manager of the American Branch,*

361 Broadway, New York.

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### CYANIN PLATES ONCE MORE.

BY V. SCHUMANN.

DR. H. W. VOGEL criticises in your esteemed journal for this year, page 388, the cyanin plates recommended by me, and asserts that he has increased considerably the durability of the cyanin by addition of aniline red.

To judge from this remark of Dr. Vogel, it might appear as if the cyanin plate—which I claim to have applied first—had retained all its advantages by Vogel's addition of aniline red, and even obtained a greater durability. But this is by no means the case. As soon as cyanin is mixed with another coloring matter, it loses in its capability to sensitize for orange in a remarkable degree. Even the chinolin red, applied first by Dr. Vogel, which, mixed with cyanin (cyanin blue), he calls azalin, makes no exception to this.

A view of the spectrum proves this clearly. The spectrum orange and also the light red can never be brought to such an intense action upon a gelatine plate sensitized with a cyanin mixture as upon pure cyanin gelatine. The greater durability of the cyanin plate of Dr. Vogel is therefore obtained at the expense of color-sensitiveness, and there is no remedy yet to compensate for this loss of orange sensitiveness; and as nothing is known yet which even approachingly would make the bromide of silver as sensitive to the weakly refractive rays as cyanin, the cyanin color-mixture of Dr. Vogel is decidedly to be rejected where the strongest sensitizing for spectrum orange is required, and only the cyanin bath plate recommended by me should be applied. But if a color-sensitive plate is wanted to remain unchanged for a long time, which, therefore, will retain its active strength for months after its preparation, then the erythrosin plate of Dr. Mallmann and Scolik should be chosen; or, if a small orange sensitiveness should offer advantages beside the yellow sensitiveness, the azalin plate of Dr. Vogel. The sensitizing of the latter succeeds just as easy as that of the former, if the formula of Dr. Mallmann and Mr. Ch. Scolik, of Vienna, which was published in the *Photographische Correspondenz* in their excellent article about azalin examinations, is observed. I have tried the Mallmann-Scolik formula repeatedly, and can highly recommend the same to all interested.



I have tried these plates spectrographically in a good many ways, and an experience of several years upon the field of spectrum photography with the use of excellent instruments, lets me confide with certainty upon these spectral results, and confirms the reliability of what I have said in the foregoing about the plates colored with azalin, cyanin, and erythrosin.

I would not like to have anybody believe that I am governed by one or two spectral views, basing my calculations upon the same. Whoever has got this idea would be convinced of the contrary by the numerous series of my spectral views accumulated during six years, aside from the fact that I keep only the best spectral negatives and destroy the rest.

What I have published is the result of extensive experiments. I tarry sometimes for a long while before I publish my results, for the very reason that I dislike nothing so much as to make known imperfect observations. For the same reason I never conceal any disadvantages resulting from my photographic experiments. I have never ascribed any durability to the cyanin bath plate recommended by me. On the contrary, since my first communication I have drawn attention to the sudden change in the cyanin gelatine, and in my extensive report about my cyanin experiments (*Photographische Wochenblatt*) I state that no more plates should be sensitized at a time than might be required during the week. I mention this circumstance only to show the reader that not Dr. Vogel, but myself first observed the weakness of my cyanin bath plate, and that I was also the first to publish it.

The assertion of Dr. Vogel is quite right, that the use of highly sensitive gelatine plates under application of the cyanin give no results. But this was the case some time ago; to-day it is different. I succeeded lately in sensitizing repeatedly in the ammonical cyanin bath, Dr. Eder's highly sensitive emulsion gelatine and to develop clearly. I had cooked this emulsion uninterruptedly, and digested afterwards in presence of ammonia. A weaker cyanin bath, and moderately strong developer, and particularly timely interruption of development, leads to this result, even with highly sensitive plates. Care is of course required, but not more than with any ordinary quick working gelatine plate. The high sensitiveness of cyanin emulsion as formerly prepared with the aid of cooking emulsion, is not reached, but this difference is felt only very little, particularly when taking views of colored objects.

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#### A NEW SIZE IN PHOTOGRAPHIC PAPER.

FORMERLY photographic paper of larger than the usual size (18 x 22) has cost very much more in proportion. The reason was there was so little demand that it was only made in small quantities. Now that pictures 20 x 24 have become common, our publishers have induced the manufacturer of the Rives paper and the albumenizers of the N. P. A. brand, to make a paper to suit large pictures, and cut up economically into smaller sizes. The size is about  $20\frac{1}{2} \times 24\frac{1}{2}$ , and it will cut 20 cabinets lengthwise of the sheet, and the grain of the paper will run the same way in all the prints. The economy of this is at once apparent, as  $66\frac{2}{3}$  per cent. more cabinet prints can be cut from a sheet of this size than from a sheet of the regular size, while the cost is only  $33\frac{1}{3}$  per cent. more. It will be known as the 13 kilo N. P. A. Albumen Paper, and will have the water-mark N. P. A. in it as a guarantee of its genuineness.

## OUR ILLUSTRATION.

THE photo-mechanical print with which we illustrate this issue of the BULLETIN is a picture of one of those pretty little lakes that are to be found on Long Island. The amateur who sent us the original negative says it was a nice calm morning when he took the photograph, and inclosed some poetry that seemed to him appropriate. The first few lines we have placed upon the picture, and we give below the whole of the poem.

"It was a lovely morning! all was calm,  
As if creation, thankful for repose,  
In renovating beauty, breathing balm  
And blessedness around, from slumber rose;  
Joyful once more to see the east unclose  
Its gates of glory—yet subdued and mild,  
Like the soft smile of patience amid woes,  
By hope and resignation reconcil'd,  
That morning's beauty shone, that landscape's charm beguil'd.

The heavens were mark'd by many a filmy streak,  
E'en in the orient; and the sun shone through  
Those lines, as hope upon a mourner's cheek  
Sheds, meekly chasten'd, her delightful hue.  
From groves and meadows, all impearl'd with dew,  
Rose silvery mists—no eddying winds swept by.  
The cottage chimneys, half conceal'd from view  
By their embowering foliage, sent on high  
Their pallid wreaths of smoke, unruffled, to the sky.

And every gentle sound which broke the hush  
Of morning's still serenity, was sweet:  
The skylark overhead, the speckled thrush,  
Who now hath taken with delight his seat  
Upon the slender larch, the day to greet;  
The starling chattering to her callow young;  
And that monotonous lay, which seems to fleet  
Like echo through the air, the cuckoo's song,  
Was heard at times far off the leafy woods among."

BARTON.

## EXHIBITION OF PICTURES AT THE ST. LOUIS CONVENTION.

## THIRD NOTICE.

O. P. SCOTT, of Quincy and Chicago, Ill., had a good exhibit of pictures from 11 x 14 and 14 x 17 plates. They were all meritorious and some really fine.

George Heyn, of Omaha, Neb., exhibited two large frames of mixed sizes tastefully arranged and well executed. Also three larger single pieces of fine work.

Hale, of Seneca Falls, N. Y., showed two collections of pictures. One of handsome portraits and busts on boudoir mounts, the other of cabinets, with three exceptions, consisting of two 8 x 10 prints and one grand panel. These were excellent photographs, appropriately framed, and were strikingly pleasing.

Weller, of Laporte, Ind., had a frame of good work; and although not a striking exhibit it shows much merit, and we hope to see more from the same studio next year.

E. J. Conrad, of Reed City, Mich., exhibited a number of fine views of camping scenes in the lumber districts of Michigan. These were particularly life-like and true to nature.

The Moss Engraving Company, of New York, had a number of excellent examples of their photo-engraving processes. Those from the new Mosstype process were very good, and showed a remarkable advance in making soft pictures from wash drawings.

John A. Treat, of San Francisco, Cal., exhibited six 11 x 14 prints, some boudoirs, and four 8 x 10 views of the Sierra Nevada Mountains in California. Also four views, 8 x 10, showing the State House, Sacramento, and two bird's-eye views of the same city. These pictures were all well done, and formed an interesting exhibit.

Ormsby, of Oakland, Cal., had a frame containing twenty-six examples of cabinet photographs, showing good enough work to warrant a larger exhibit.

Kuhn Bros., of St. Louis, who we omitted to place with our other St. Louis friends from an oversight on our part, and also from the isolated position of their exhibit, had a very large collection of examples of enlarging on gelatino-bromide paper. Many of the pictures equaled the best of those shown by other exhibitors of this process. Heads, full and three-quarter figures, architectural subjects, and landscapes, were all well executed. Some of the heads are spirited in pose and effective in tone, and although the exhibit is marked "every-day work," it is remarkably well done. Several of the prints were intended to show what could be done by the application of colors to gelatino-bromide paper, and were very effective. This exhibit occupied 400 square feet of space; the largest bromide print was 31 x 48, and there were fifty others about 22 x 27. Many of these prints were on gelatino-bromide paper made by Hutinet, of Paris, and imported by our publishers. In addition to these there was a large collection of stamp photos, negatives from which the bromide enlargements were made (a very interesting feature), and a model of the device used for enlarging. Altogether this was an extremely interesting and highly instructive exhibit.

J. Harvey Doer, Louisville, Ky., had four framed portraits 18 x 22, and four from 14 x 17 plates. Also two frames containing cabinets, boudoirs and panels. These were all carefully executed, and bear the impress of study and good judgment.

Alva Pearsall, of Brooklyn, exhibited eight large size heads of eminent men. But we don't think this is a fair exhibit of his work. We believe he can do much better, and that we have seen some.

John Reid, of Patterson, N. J., exhibited six large and six 14 x 17 views of bridges and waterfalls, all well done and finely finished.

Reichmann & Co., of New York, had a fine exhibit of panels and cabinets handsomely mounted, and examples of much photographic skill.

James Hastings, of Boston, Mass., had a number of well-mounted grand panels and squares of much more than average merit, and well finished.

Gubelman, of Jersey City, N. J., showed a number of those beautiful marine views for which he is famous. These were of various sizes and fully equal to the best work of this well-known artist.

A. K. P. Trask, of Philadelphia, had a collection of large heads of children from 11 x 14 plates, and three half-life size. All were admirable work.

Stuart, of Buffalo, had a pretty and well-selected contribution of fine work. The character studies were curious and interesting.

Curtis, of Niagara Falls, exhibited ten large views of the waterfall that were quite well executed.



Irving Saunders, of Alfred Centre, N. Y., who obtained the \$50 Anthony Prize for an 18 x 22 portrait, had a fine collection of cabinet portraits and several larger pictures. The 18 x 22 prize portrait was a half-length figure of President J. Allen, of Alfred University, sitting at a table reading, the head slightly turned to the front; it was a truly remarkable production, in fact we might almost say a perfect portrait.

George W. Wise, of Jamesville, Wis., had a very good collection of cabinets, 8 x 10, and a few larger pictures, all well done.

D. A. Clifford, of St. Johnsbury, Vt., had a very interesting exhibit. A number of very pretty views were quite attractive, and the pictures of Barnum's elephant parade were remarkably good pieces of instantaneous work upon such dark objects. Every wrinkle in the skin was wonderfully well brought out. We are indebted to friend Clifford for a set of these fine animal pictures.

S. S. Felder, Huntsville, Texas, had a collection of cabinets of good quality and finish.

Bailey, of Palestine, Texas, showed a small collection of views and cabinets that were well done and quite interesting.

C. T. Stuart, of Hartford, Conn., had a very handsome collection. The whole exhibit showed much painstaking care to have a good-looking display, in addition to the exhibition of purely photographic skill. Two large frames were filled with some beautiful cabinets and squares. One frame contained some most admirable half-life size heads. Another contained some beautiful interiors taken with uncommon skill. But one of the best parts of this fine collection was a frame of dog and cat pictures, in which the animals were posed to get the best effects. These were some of the most skillfully executed photographs we have seen, and extremely life-like.

D. R. Clark, of Indianapolis, had a handsome collection of portraits. Three were full length and two were three-quarter female figures from very large plates, and thoroughly well executed. The whole exhibit showed fine taste and feeling in the pictures, and neatness in their arrangement.

Moreno & Lopez, of New York, had a charming collection of portraits of unusual artistic merit. Many of these were from 18 x 22 plates, handsomely mounted and finished. The whole exhibit fully sustained the reputation of these well-known artists.

Fowler, Chicago, contributed a fine display of portraits from 18 x 22 plates, and a number of cabinets. He deserves great credit for his handsome exhibit, and displayed fine taste and many artistic traits in his pictures.

Heimbürger Bros., of Davenport, Iowa, exhibited a large number of pictures, principally portraits. These gentlemen came here a few years ago from Germany, and they give evidence of many of the characteristic good qualities of the artists of the Fatherland.

McLeod, Atchison, Kan., deserves great praise for his handsome contribution to the exhibition. The display consisted of pictures ranging from grand panels to cabinets, and was very well executed.

Ingersoll, of St. Paul, Minn., had a large collection of stereoscopic views of that highly interesting section of the country, the Yellowstone National Park. These were all finely executed. The exhibit contained street scenes, tobogganing views, pictures of the ice palace, hunting and winter scenes, all of a very interesting character.

F. A. Coyle, Monticello, Iowa, had a good exhibit of portraits of various sizes, all well done.

L. P. Schurr, of Lockport, N. Y., had a number of portraits of various sizes, well executed, and indicating character in their treatment. The *genre* pictures were original and interesting.

W. H. Potter, of Indianapolis, the busy President of the Association, found time to contribute his quota to the exhibition. His exhibit of pictures was large and varied, and contained some very attractive features. Two large panel pictures, from plates at least 40 inches long, were notable examples of photographic skill. Evidences of good artistic feeling were shown in the portraits in this collection, and there was a uniformity about the work that precludes the picking out of individual examples. Unfortunately the light upon the exhibit marred many of its fine qualities when the sun was shining.

W. E. Hook, Manitou Springs, Colo., exhibited a collection of stereoscopic views and boudoir pictures of Rocky Mountain scenes which were beautifully executed.

M. L. Cormany, Augusta, Ga., had a collection of fine large heads, showing much artistic skill.

Frank A. Place, Warsaw, Ind., had a collection of very good work of various sizes.

The Photogravure Company, of New York, made a very attractive display of the work done by the photo-mechanical processes used by them. The beauty of these processes must be seen to be appreciated.

Laurenz Wickland, Stillwater, Minn., had a unique display of fine photographs, the pictures being arranged in a kind of framework of half-round bark-covered pine branches.

E. A. Reinhart, Denver, Colo., displayed a handsome collection of pictures ranging from 14 x 17 down. These all showed fine work, graceful posing, effective lighting, elegant mounts, and were tastefully arranged.

Davis & Rayburn, Little Rock, Ark., showed a number of electric light pictures that were the only ones in the exhibition. The results were good for this kind of illumination.

J. A. Brush, Minneapolis, Minn., exhibited two neat frames of cabinets and larger sizes of good quality—a pleasing selection.

E. Long, Quincy, Ill., had a large exhibit of his well-known solar prints on white and tinted paper. Also a neat display of blue prints of good quality.

C. S. Cudlip & Co., of Washington, D. C., displayed a handsome collection of 4 x 5 views arranged around a large picture of the Washington Monument. These were well done and quite interesting.

Montfort & Hill, Burlington, Iowa, exhibited a very handsome collection of brilliant pictures. The posing in these was notably unconstrained and graceful.

Pietz, of Springfield, Ill., had a handsome collection of pictures in warm tones that were very pleasing. The children's pictures in this display were very attractive.

McDonald, South Bend, Ind., had a collection of very artistically mounted panels that were very attractive.

George W. Kirk, Huntington, W. Va., exhibited a number of excellent cabinets. These showed fine lighting, good posing, and neat finish.

Campbell, Springfield, O., showed some large heads and cabinets. All were good work, and the medallions were quite artistic.

A. H. Plecker, Lynchburg, Va., had four handsome frames of large panels. All were good work, and one interior was very fine.

O. Heimbürger & Son, New Albany, Ind., had a collection of large handsome views, fine heads, groups, and excellent cabinets.

M. P. Brown, Tecumseh, Mich., exhibited a number of cabinets. They were good pictures and well finished.

Richard Walzl, of Baltimore, had three handsome carved oak frames of his every-day work. The portrait work, large and small, was excellent. The interiors and landscapes were very fine, and the picture of the Washington Monument in Baltimore is one of the best we have seen of this exceedingly beautiful shaft.

L. Robira, New Orleans, La., had twenty-four cabinets, which were as fine pictures of this size as we have ever seen.

A. E. Taylor, Clinton, Wis., showed a number of large heads and groups. The gray head of an old gentleman was very fine; the group of children with see-saw was good, but a trifle crowded; boys fishing was very good.

Newcomb, Salt Lake City, Utah, had twelve fine  $6\frac{1}{2} \times 8\frac{1}{2}$  views of waterfalls that were excellent in every way.

Mrs. E. N. Lockwood, Ripon, Wis., displayed a number of groups, large pictures and cabinets. The portraits showed good posing and excellent lighting, and there was a good finish to all the pictures.

Purviance, of New York, contributed views of yachts and other scenes, which received the \$50 Anthony Prize for  $8 \times 10$  views. Comment upon these pictures is needless; we have yet to see poor work from this artist, and he is improving almost daily.

Parkinson, of New York, contributed a number of cabinets. The children's pictures in this collection were exceedingly fine. Being mostly on dark backgrounds, they exhibited some exceedingly artistic posing.

S. L. Stein showed a collection that ranged from large pictures down to cabinets. All were of the best quality, the theatrical pictures being very good, notably Richard the Third and Shylock.

G. L. Temple, Clinton, Ia., exhibited several excellent pictures of ladies. Also a handsome frame of cabinets of fine quality. A medallion view in this collection was a gem.

Macnabb, of New York, sent a number of large heads, three-quarter and full-length figures. All were fine work and well finished. Several tobogganing scenes in this collection were very good.

Dana, of New York, exhibited a number of fine large heads and some panels of theatrical characters. All were finely executed and very artistically finished.

J. S. Johnston, of New York, sent a number of views of yachts and some exceedingly fine surf pictures. The pictures of the Genesta and Puritan we have already noted in the BULLETIN. Views of pug dogs and cats were a very funny part of this exhibit and were finely caught.

We still find it impossible to finish our review of this great collection of pictures in this number of the BULLETIN. In our next issue we shall surely reach the end of what to us has been a long, but interesting, task.



## IS PHOTOGRAPHY ART?

BY F. H. WILSON.

[Read at the St. Louis Convention of the Photographers' Association of America, June, 1886.]

*(Continued.)*

WHICH is the work of art? Art feeling, like blood, will tell and show in the results. Those pictures show that a mechanic is a mechanic and an artist an artist, whatever he may work with.

And there are many of them among the men who paint with the sun. Their ranks are full of men of strong artistic feeling whose hunger for art has found satisfaction here. Many a one has found his profession a delight, and in his spare time, too often scanty, forgotten task-work and commonplace when feeding his soul on beauty and nature. Among such men abides warm enthusiasm, real appreciation of art, and an understanding of its work above the vulgar admiration—the sympathy of fellow-workers with those who produce them. It needs an artist to appreciate an artist; and that is why photographers' work in popular estimation sometimes falls so low. It is so easy. Art is said to be long; the drop-shutter is very fleet. Photography is a condensed art, but every item of it is the sum of long experience. There were three generations of research even in the plate that could catch the image in that shutter's snap. But think of the science and skill that prepared plate and instruments; the chemical miracle of development; the avoidance of the ills and accidents that hover around the negative in locust swarms; and then the crises of printing, toning, and fixing. Sir Joshua Reynolds said that in some arts men may work with half-knowledge, "but the artist must have all." I think the photographer answers the description.

Yet by division of this labor it has been made all too easy. How could its productions keep up to a high excellence with this fatal facility dragging them down? Art is not easy, but plate-spoiling is. The impression a plate may bear in different hands has as varied possibilities as those of a blank sheet of paper: one may hold a poem or a butcher's bill, the other a photographic song of nature or a record of equal slaughter. How would etching, sculpture, painting itself, have kept their walls up and their standards high against such a barbaric horde as have raged through the streets of photography's citadel? No wonder the broadcast results made the world think that nothing good could come out of such an artistic Nazareth. True, as some front parlors bear witness, some stragglers of the same tribe find their way into the camp of art, and hang up the spoils of plaque and canvas. But these people do not so seek publicity, nor cover the country with their "libels on unoffending landscapes," and signs of "Artistic photographer. Cabinets, \$1.50 per dozen."

Photography, again, has a glorious mission in popularizing art, and has hurt itself in so doing, till it is thought of only as a method of reproduction, never as itself creative. And man values a thing as it is hard to get. If the photograph hung up in the galleries, and was quoted at fifty dollars in the catalogue, its quiet virtues would soon blaze forth very pronouncedly indeed, and we should hear what miraculous art it was. And I firmly believe that some day the work of some men will enjoy this very distinction. When the first daguerreotypes were being made, and sold for the price of a good etching or water-color sketch, they were thought the last work of art, and their process the most marvellous dis-

covery of modern times. How familiarity has bred contempt! When more accessible, they fell in popular esteem. When the moon was within grasp, the children ceased to cry for it.

Yet I think some day they may find themselves coveting it again, and the moon riding higher than ever. Photography has only just begun to grow. The fruits of her tree we eat to-day are only a few windfalls compared with what we may expect in her autumn. Look how she has grown in the last twenty years, and think where she will be at the end of the century. And her growth in art will not lag behind her progress elsewhere. Art has been ungrateful to her; has made her, indeed, as Dr. Vogel calls her, a Cinderella, sitting among the ashes while her proud sisters flaunted abroad in robes borrowed from her. More than sisterly help have they had from her; she has been their schoolmistress, and her lessons have had deep effect, and show plainly in the works of the younger painters of the day. The age of ideal, impossible compositions is past; the modern taste is for the actual. It is naturalistic, realistic; asks things as they are. The heroic novel is dead; it is some time since Macbeth was played in red velvet hat and tie-wig. They do not paint noble ladies as Olympian goddesses, nor shepherdesses in skirt and panier now. "Give us realities," they say to-day; there is interest enough in them. Paint the man as he is—full of nature, character and life, sincere, and therefore original. What a pity that stern and splendid old realist, Oliver Cromwell, did not live to have his photograph taken—"Wart and all!" The note of photography rings thoroughly in accord here. They would have clean naturalness, faithful realism, clear detail; these she gives. There is greater fondness for landscape than ever before; this is, above all, the province and most favorable field for photography. The life of the time, studies and stories of the people; she can render these. Late-born, she is in sympathy with the age. She is in the very forefront of the march of modern feeling.

The future holds great things for her. She has battles to win, wars against foes within and without—against the fever of facility, against cheapness and carelessness and ignorance, that have brought down on her artistic dislike and popular light esteem. But beyond a doubt she will surmount these troubles as she grows, and gain the place she deserves; and it will be by the aid and effort of the men who gallantly and rightly seek to exalt their calling, to make it pure and of good report, and to hold as high and as honorable as any the name of Artist-Photographer.

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### WET AND DRY REPARTÉE.

*To the Editors of the BULLETIN.*

ONE great boon conferred upon the conversational world by the advent of the dry plate, is the doing away with the old meteorological greeting, "Warm day this!" for a newly formed substitute, "Isn't this a friller?" I was led to coin this expression from a conversation I overheard during the last heated term.

While sitting just outside my dark room door, nibbling a hypo crystal by mistake, a lively chit-chat sprang up between a wet and dry plate, which, though not photographed from a jet of running water, is perhaps just as accurate.

"Hello, old Dry!" said the wet plate from the overhanging shelf. "This is a calker, ain't it?"

"Bet your life," says the dry plate from the rack, "but if I'd been hung over a fire this weather to dry, I'd kick, I would."

"You'd kick at anything, you would. Get on to your skin all cockled up. What's the matter with you?"

"Oh! I'm all done up. I'm sick, I am—feel stiff and dirty. That darned amateur didn't half wash me. He's a new one at it. Say, Wet, fire that hunk of alum over here."

The alum in transit struck an undeveloped plate, and a smothered voice piped up: "Ah, there, brother dry? What kind of stuff did they swash in your face?"

"Anthony knows; I don't," responded Dry, rubbing a frill from his nose. "Concentrated something that'll make you jump up lively and sharp. I'll give you a pointer, though. When your turn comes kick like a steer for alum, or your vest will peel up. These slops are n. g."

"I'm tired," drawled Wet. "I sat on a camera half a day yesterday morning, looking at a coal bin, and have been handled and soaked ever since."

"Oh! that's nothing," said Dry. "Last night they set my face to the moon, and the darned thing streaked clear across it, while a girl with a coat sleeve around her waist yawned at my patience."

"Say, Dry! Here's a conundrum: 'Why are you like a little girl?'"

"Oh! it's too hot. I don't know. Why am I?"

"Because you develop so pretty."

"That, my dear, is flattery," said Dry. "I'll go you one better. 'Why are you like a thief?'"

"Well, why am I?"

"Because, in time, you take everything you see."

At this juncture I opened the door. The parrot shouted "chestnuts," and the cat shed tears in the hypo pan. PYROSTAIN.

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## THE DECLINE OF PRICES AND THE REMEDY.

BY A. ST. CLAIR.

[Presented at the St. Louis Convention of the Photographers' Association of America.]

OF all the questions affecting the photographic fraternity of the present day, the question of prices is at once the most important, the most difficult, and the most generally discussed.

The question is one which antedates photography by many years. There where "Cheap Johns" in the land long before the advent of Daguerre, Niepce, or Fox Talbot. Those of us who pushed the buffstick in the days of silver-plate work, well remember the time when five dollars was the ordinary price of a daguerrotype. It used to be a common saying in those early days that a man had better break stones by the cord for macadamizing the roads than make daguerreotypes for less than five dollars; long before the advent of the collodion process, men were to be found who advertised first-class pictures for a quarter of a dollar, and bang-up pictures for fifty cents.

From the advent of the daguerreotype to the present day, the knights of the camera have quarreled over the question under discussion. The ivory miniature painter raised a howl because the more brilliant, more delicate, and vastly



more accurate daguerreotype superseded his hand-painted, scarcely recognizable picture. Stigmatized it as a machine picture, beneath the notice of genuine artists. In those days a few men obtained fabulous prices for their portraits of distinguished persons, but the average artist was obliged to content himself with from one dollar to five, for such work as the few head men sold readily for a double eagle or more; while scores of men were glad to keep the wolf from the door by making portraits of average quality for twenty-five cents. By this it is plain that the charge made against us is a most unjust one.

In looking for a why and a wherefore for the present excitement on this question, it is well to make a retrograde inspection, and try if we can find the root of the evil.

The extreme simplicity of the daguerreotype made it an easy matter for men of average ability to make a start in the new business. Men laid aside the plow, the plane, yea, even the mortar and pestle, and after a month, or less, with a peripatetic daguerreotypist, came out as full-fledged artists. A few of these having a natural talent for the art-science, and studying to make each successive picture something better than the one preceding it, made a success financially, and as their experience added to their knowledge, they took a higher position on the ladder of fame. Men of lesser note had their families to support, and found the selling of diplomas about as profitable in our business as it afterwards became in the medical profession; and, as a consequence, scores of men were induced to embark their entire capital in a business of which they had not yet learned the rudiments.

The natural result was just what might have been expected, the supply exceeded the demand; and as the unskillful artist found no demand for his productions, he naturally concluded that the price he was asking was too high for their market value; so he resolved to find that value by reducing his prices, in the hope that when he found what the public considered them worth, the demand would increase; and as the cost of the material bore no proportion to that of the carpenter or blacksmith, the idea that an increase in his orders would compensate for the decrease in his profits, took such a firm hold of his mind, that, although forty years of experience have proved the fallacy of the idea, it has been handed down from father to son, and is boldly promulgated in these our own times.

That a few isolated cases have occurred wherein men who could not command patronage by the quality of their work have succeeded in doing so by reducing their prices, is no argument in favor of cutting rates, because where one has succeeded hundreds have failed. Besides, every little town has its photographer, and as no one has ever succeeded by cutting rates except in large cities, and so few even in the cities that they may be counted on one's fingers, yet every photographer throughout the land has suffered by the suicidal policy of cutting prices.

It is doubtless true that here one and there another has maintained a fair price, while all around him have been forced to yield to the demand for cheap photographs; but you will immediately find that his health is so impaired that a complete rest from business is necessary, for which reason he is willing to sell out. If the real motive for selling out were known, in nine cases out of ten a failure in patronage would be found going hand in hand with the failing health.

If in this paper I were not determined to avoid anything which may fairly be

construed as personal, a hundred cases could be cited and every position proved by illustration.

While we all agree that a very unfortunate condition of business affairs really exists, I do not expect all to agree with me as to the causes which have produced this decline, both in business and prices; neither do I expect all to agree with me as to the remedy suggested.

I assert, without fear of successful contradiction, that no resolution of this or any other convention of photographers will, or can, so affect the question as to afford direct relief. The matter is beyond our reach. Nevertheless, there is something we not only can do, but which we must do. We must put the matter in such a form that those with whom the power rests may know our wishes, and be thereby enabled to proceed understandingly.

To begin with, we must unequivocally admit that the remedy is beyond our reach, and appeal to the acquisitiveness, the self-interest, and the cupidity, if you will, of one class, and the conscientiousness and the sense of rectitude of the other.

We must also pacify ourselves; not by appointing a special committee to report on the relative merits as photographers of Messrs. A, B, and C, but by appointing a committee of the whole to report individually to the public at large upon the grade of his own studio. This can be easily and perfectly done by adopting their grades or standards of prices; each photographer to place his own studio in the grade to which he thinks it belongs. If we were to appoint a committee of three, consisting of Sarony, of New York, Van Loo, of Cincinnati, and Roche, of Chicago, to report upon the grade to which the studio of any photographer properly belonged, it is certain that their report would be unsatisfactory; but if we make each man report upon his own status, by giving him his choice of three grades of prices to choose from, there would be no quarrels on that subject, because the public would either indorse the rating by patronizing the studio, or reject it by the opposite course. In either case there would be no appeal, and the photographer would have no one to complain of or to.

As a little assistance is often of more value than a large amount of dictation, I propose to enforce my thesis by practical suggestions. At present the cabinet size being most popular, I propose to use it as the basis of calculation. I suggest that this convention adopt three grades of minimum prices, as follows: First, or lowest, grade, three to three and a half dollars per dozen; half dozen, two to two and a half dollars. Second, or medium, grade, four to five dollars per dozen; half a dozen, two and a half to three dollars. Third, or highest, grade, six dollars and upwards per dozen; half dozen, four dollars or more, as the artist may decide for himself. My idea is that while a few in the larger cities who cater to the poorer and artistically uneducated classes, will choose the lowest grade, the great majority of the craftsmen, those who are truly the bone and sinew, "the power behind the throne" of the fraternity, will at once range themselves as belonging to the medium grade, and make five dollars per dozen their standard price.

What shall we do with those who refuse to be guided by the grading adopted, and insist upon calling themselves first-class photographers while cutting prices below living rates? I reply, ignore them utterly, socially, report them to every dealer in your neighborhood, and refuse to deal with any man who supplies them with photographic stock. I do not now, and never did, advise any harsh

measures toward them; on the contrary, I propose to go to them in a fraternal way, and try to induce them to consider the matter over. Be courteous towards them-until you find them incorrigible, then drop them entirely. Of them I say, as the prophet said of the incorrigible Jewish infidel, "Ephraim is joined to his idols, let him alone."

What next must we do? Appeal, as a convention, to all stock dealers throughout the land to stop the supplies on all Cheap Johns. Will they heed you? Yes, they will heed you. It will be to their self interest to heed you, and self interest rules the world. Permit me to illustrate my recommendation. In 1863, after the draft riots in New York, a grocer with whom I dealt made some remarks which gave serious offense to a number of those who condemned the riots and praised those who encouraged or approved them. Myself and about a dozen others quietly withdrew our patronage, and transferred it to a poor struggling young man whose sentiments were in unison with our own. What was the result? The loss of any one of his patrons would not have affected his business, but the sudden loss of a dozen did. Our example was followed by others to such an extent that, when I visited the city after being absent from January, 1864, to December, 1865, I found that the once haughty and prosperous merchant had gone to the wall, while his rival had risen from a little wooden shanty to a double brick store; from delivering his goods in a hand-cart moved by his only assistant, a boy, to keeping half a dozen clerks always busy, and half as many delivery wagons.

The boycott is a most powerful lever. I do not advise its use, but I have shown what it did upwards of twenty years ago, before the word was coined. Do I think the effect of my recommendations would be immediate? I do not. Large bodies move slowly. For over thirty years we have heard complaints of certain ruin from declining prices. Slowly, but surely, the Cheap John has gathered power until the present time, and now he has his grasp on our throat, and is doing his utmost to strangle us. Like the bundle on the back of Bunyan's pilgrim, the Cheap John is a load we have to carry wherever we go, and the more we squirm and struggle the more firmly he holds us. Those who are familiar with the story will remember that there came a time when the bundle fell from Christian's shoulders, and he pursued his journey with a lighter heart and more elastic step. How did he get rid of it? By first acknowledging that he was powerless to remove it himself, and appealing to one who had the power. The appeal was successful, and the burden was removed. So it is with us. As individuals and as a convention we are utterly powerless. The stock dealers have the power, and as their interests and ours are identical, they will rid us of this incubus if properly approached. There is no need for boycotting as it is generally understood. If this convention were to say that none of its members should deal with a stock house which supplied Cheap Johns, it would be considered a conspiracy, and would defeat itself by enlisting the sympathies of the entire association of stock dealers; but if we, as individuals, resolve to cease dealing with any particular house which renders itself obnoxious by encouraging Cheap Johns and bogus amateurs, we have a perfect right to do so. Nay, more, we can openly say to such an one, "Jim Bludsoe is a Cheap John, and Hartley is a bogus amateur, who sells his photographs at two dollars a dozen. They are injuring the business generally, and mine particularly. You have a perfect right to encourage them if you please but I cannot support you



while you are helping them to hurt me, therefore if you continue to sell to them I must look up another dealer." Although a dozen men should thus address a dealer in one day it would not be conspiracy, neither would it be recognized as a boycott, because it was the work of individuals, each speaking and acting for himself; but it would be just as effective. While such sentiments by a single individual would in all probability go unheeded, a dozen such letters received in a week would cause a very unpleasant sensation along the spinal column of the strongest dealer in the United States.

In conclusion, permit me to condense and express the gist of the whole matter, so that you may the more easily remember it.

*First*, then, as a convention we can do nothing to rid ourselves of the incubus of Cheap Johnism, beyond defining what we consider the very lowest rates permissible.

*Second*.—We must first give the dealers credit for the ability to assist us, and acknowledge our dependence on them.

*Third*.—We must tell them (by resolution or otherwise) that we consider their interest in keeping up prices identical with ours, and ask their assistance and co-operation.

*Fourth*.—We must act at once. Delays are always dangerous. We have everything to gain and nothing to lose by acting promptly.

*Fifth*.—We must remember that while the dealers know as well as we what we need, if we do not ask them to help us we cannot expect them to do so.



SOME simple facts concerning color will be useful to many when deciding how to dress for a photographic picture. Dark brown, dark green, maroon and plain black materials, without gloss, will take a rich black color. Silks of the same color will take considerably lighter. Snuff-brown, dark leather, dark drab, scarlet, cherry, dark orange, crimson and slate will take a very rich drab color. Violet, blue, purple, pink and magenta will take very light, and should be avoided in dressing for photographs. The hair should never be very wet or glossy.—*Manufacturers' Gazette*.

THE Earl of Dufferin's rebuke of that ardent amateur photography which made the condemned Burmese at Mandalay its victims, seems to be justified. A Provost-Marshal has at best a stern round of duties to perform; and when, in addition to his sword of office, he arms himself with a camera for the purpose of securing permanent likenesses of the people he executes at the precise moment the bullets strike them, his love of art carries him too far. The utmost that has been said in Colonel Hooper's behalf is that his prisoners were already blindfolded when placed against the wall, and knew nothing of the contributions which their last moments of life were to furnish to amateur photography. It is now also denied that Colonel Hooper instructed the officer commanding the firing party to delay the final word "Fire!" until the plate should be exposed. Nobody however has questioned that the feat of photography itself was attempted before a promiscuous throng, and indeed a court of inquiry at Rangoon, we believe, has established the fact. Possibly some Provost-Marshal, carried away by the current craze for photography, might at length exceed his authority in quest of subjects for his negatives, and repeat in our day the story of Parrhasius.—*N. Y. Times*.





supervision and explanation, a fixed charge is made of five shillings to members and ten shillings to non-members, which in all cases must be inclosed with the entry form, or sent with the apparatus on Wednesday, September 22d.

A catalogue containing the price of pictures and apparatus to be disposed of will be laid on the table. It is desirable that professional exhibitors should state the price of their exhibits on the entry form, as numerous inquiries are made during the exhibition respecting the price of pictures and apparatus.

Exhibits sent in packing cases (carriage paid) must be addressed to the

"Photographic Society of Great Britain,"

Care of Mr. James Bourlet,

17 Nassau street, Middlesex Hospital,  
London.

Packing-cases may be sent before Wednesday, September 22d, but they will be too late if received after that date.

Exhibits (including pictures, apparatus and appliances, etc., sent by hand) will be received at the gallery, 5A Pall Mall East, on Wednesday only, September 22d, until 9 P.M.

N.B.—No packing-cases can be received at the gallery.

Lantern transparencies sent in competition for the medal, not less than twelve, fitted (removable) in a frame to stand upon the table, and it is desirable that duplicates thereof be sent for exhibition in the optical lantern. They must be delivered on Wednesday, September 22d, and will only be eligible for award when both the negatives (which may be required to be seen) and slides are the work of the exhibitor.

It is to be distinctly understood that the sending of exhibits signifies acceptance upon the part of the exhibitor of the appropriation of the awards made by the appointed Judges, and the decision of the council upon all matters connected with the exhibition as absolute and final.

The council do not hold themselves responsible for any damage that may happen to the pictures, or other exhibits, whilst in their custody; but they will take every precaution to insure their safety and their prompt return to the owners at the close of the exhibition.

Photographic transparencies will be shown with the society's optical lantern every Monday evening during the exhibition. Slides are invited to be sent for this purpose; they must not exceed  $3\frac{1}{4}$  inches in height, and must be delivered at the gallery not less than ten days before the Monday of exhibition, to enable the committee to select and arrange them.

### *Removal of Exhibits.*

All exhibits received in packing-cases will be repacked and dispatched directly after the close of the exhibition.

All exhibits left at the gallery by hand must be fetched away on the day appointed, due notice of which will be sent to the exhibitors.

N.B.—Particular attention is requested to the removal of exhibits on the day appointed, as if not taken away considerable expense is incurred by removing them from the gallery to be warehoused.

Exhibitors not being able to send to the gallery, can, by giving instructions to the Assistant Secretary, and paying the cost, have their pictures packed in a case and sent anywhere by carrier.

Blank entry forms and any further information respecting the exhibition, apparatus, lantern slides, and nomination forms for membership, can be obtained from the Assistant Secretary, Edwin Locking, 5A Pall Mall East, London, S.W.

W. F. DONKIN, M.A., F.C.S., F.I.C.,

*Hon. Secretary,*

Malvern Lodge, Upper Tulse Hill,  
London, S.W.

## THE PHOTOGRAPHERS' ASSOCIATION OF AMERICA.

### *Fourth Day—Continued.*

Dr. ELLIOTT—Before Mr. Cooper proceeds, I move that the papers which have been sent in, where the writers of the papers are not present, be read by title and that the same be published in the journals. I do this so that we may give Mr. Cooper a chance to tell something technical and practical, as he has taken the trouble to come here and speak to us on this subject.

The motion was agreed to.

The following papers were then read by title: "Brains and Judgment Needed in Photography," by C. F. Moelck; "The Successful Photographer," by Millard P. Brown; "The Decline of Prices and the Remedy," by A. St. Clair [see page 498]; "Art Censorship," by L. H. Sherman; "Money-Making," by W. J. Guild. [These papers will appear in the BULLETIN.]

The President—We will now hear the report of the Auditing Committee.

### *To the Photographers' Association of America.*

We, the undersigned, have carefully examined the books of Mr. H. McMichael, your



worthy Secretary, and find there is a balance due him of ten dollars and nine cents.

E. LONG,  
D. A. CLIFFORD,  
D. R. CLARK,

*Auditing Committee.*

The *President*—I am informed that quite a large number of unmounted photographs have arrived here, sent by a gentleman by the name of J. Pike, 16 New Bridge street, Newcastle, England, to be placed on exhibition and for competition. There is also another box containing a large number of photographs on the way, and from what I can learn the exhibit would cover at least three hundred square feet, and being photographs of the mountainous regions of Switzerland, and taken by the renowned photographer F. Petsch, I suppose are very fine. They also were sent to be put in for competition and exhibition. The Local Secretary desires to know what he shall do with them.

That brings up another subject. I want to make a statement. The Convention at Buffalo had received an extraordinary fine exhibit of photographs from Germany. They came too late for the convention. They were received by Messrs. Anthony & Co., and I requested them to keep them and send them to this convention. They sent me a letter, which I received on coming to this city, that they were afraid, as a rule had been laid down that everything that had not been made in the last year would be ruled out, that by putting them in they might conflict with the rule and mix things up. But this was a mistake on their part. The limitation was only intended for American photographs, and not for foreign exhibits, and they could have come in just as well as any other pictures. There was no limitation put on the foreign pictures. We put it on our own because some parties had been exhibiting pictures for years and there was nothing new. So the rule was made so that the men attending the association would stand a better chance of getting gold medals.

Dr. ELLIOTT—We did not want to take any chances.

The *President*—I am sorry they were not sent on.

Mr. GENTILÉ read Mr. Carlisle's paper entitled "On The Business Management of a Photographic Establishment." [See BULLETIN, No. xv, page 461.]

On motion of Dr. Elliott a vote of thanks was tendered to Mr. Carlisle for his paper. A further vote of thanks was tendered to Mr.

Gentilé for the able manner in which he read the paper.

Also a vote of thanks to all the gentlemen who have written papers which have been read by title.

Also a resolution of regret to the foreign exhibitors that their exhibits arrived too late, and thanking them for the trouble of sending them.

The *President*—Mr. Cooper is in order, we will hear from him.

Mr. COOPER—I am very sorry indeed to have been informed, through a rather irresponsible source that I was so uninteresting yesterday as to render the meeting comparatively a failure so far as I was concerned. Somebody made a remark yesterday with regard to making photographs, if at first you don't succeed try, try again. So I hope if I did not succeed yesterday in interesting you I shall succeed to-day in doing so.

A *Member*—I think what you heard was a mistake.

Mr. COOPER—I am very willing to leave it as it is.

Mr. LONG—At any rate we are not of that opinion.

Mr. COOPER—I am going to try again. Yesterday I showed you a method of making pictures which is not a method ordinarily in use, and I did not refer to what was done by anybody else. I refer here to an apparatus by means of which are all able to do enlarging with little or no expense except that of the use of the paper. You see here presented a diagram which represents a wall above and a wall below, and this is supposed to be a window opening in the wall. Here is an aperture in this window, which is otherwise dark. It is intended that the light should be admitted through that aperture by placing a piece of ground glass first in the aperture and then arranging a method by which you can slide your negative immediately in front of that, inside of a room, and rigging on the outside a screen which will act as a reflector. Let it be white paper or white muslin. Any suitable substance you can get together for the purpose. You then make a bag, of black cloth, rubber-cloth, or something of that kind, tying it around here so as to prevent any extraneous light getting into the room excepting through a lens which is on an ordinary camera—any kind you have in a camera, of suitable size, placed upon a table. You see the idea. Here is your table and there is your camera. Let it be focused back and forward just as you may happen to have it, in focusing it backward and

forward as you do in the gallery. This you can do accurately and then take your bag and tie it around the front of the lens. Then place your negative in here with a ground glass between it and the light. Then take an ordinary packing box or anything that is suitable for the purpose, and on top of it place your drawing board and fix it in a central manner so as to enable you to pin your paper on. Focus correctly, and if you can get a good focus on there, so that the two foci are coincident, you may make a sharp picture. I have had persons attempt to try the ordinary magic-lantern lens such as is ordinarily used in magic-lantern projections. They thought, and I think it is generally the impression, that because magic lantern lenses are suitable for projections they could take the lens and make a picture. But when they come to try it they found it would not work. You see how simple this is here. There is your window and the aperture with the ground glass, and then the negative and next the lens and the old box on the table, with a piece of board stuck up of sufficient size—it takes something to stay it at the ends. You see that thing, gentlemen, it can be got up probably at an expense of four dollars or less. Any one can make himself an apparatus of that kind by which he would be able to produce as fine work as any one could produce in a fine establishment on bromide paper. After he has succeeded in that and is desirous to get a more paying apparatus, which of course it stands to reason is the most satisfactory way of working, he can do so. He need not feel it is necessary for him to have an expensive apparatus, as a great many people feel who purchase something which they do not want, and make a great outlay of money from which perhaps he will not realize any return.

*A Member*—What size lenses do you use?

Mr. COOPER—It depends upon the size of negative you are going to enlarge from. If you are going to enlarge from 5 x 8 pictures, your cabinet negatives, half-size lenses will answer the purpose nicely. If you desire to enlarge from an 8 x 10 then you must have a lens capable of covering an 8 x 10 plate. No lens will project over a plate larger than it is able to cover in the ordinary way of making photographs.

Now there are a great many parties who have desired to go into the business of making permanent bromide prints on a large scale, and a number of them have traveled a great many miles to reach our factory at Rochester for the purpose of finding out how that is done. As

the Company have no secrets with regard to the method of making photographs which they are not perfectly willing that the public should be quite well acquainted with, they have permitted me to make this diagram so that you can see what it is. It is almost precisely in construction what was shown yesterday, with the double condensers of a camera and the easel there, with a box provided there. There is a much larger area there which would enable you to make pictures from 40 to 60 inches and more up and down, 32 inches being the widest that can be made at present. Here is an electric light. This is placed in such a position as will enable a person to see how it is arranged in relation to the lens, this being as nearly in the optical center of this lens as it is possible to get it. However, there is one little point I wish to call your attention to, and it is perhaps one of the most important things in the way of explaining how soft and nice these pictures are. As you have seen, to use this lens perfectly, to open these condensers would be to give so great a flood of light that it would show every imperfection, all the specks and spots of dust. They would be exaggerated and it would give you a great deal of trouble and the bother in spotting out your prints. But by interposing a piece of ground glass between the lens and the light an extreme softness is acquired, and you are enabled to get your pictures perfectly soft with this diffused light and the effect is very fine. Here, as I explained to you yesterday in the other case, is a frame into which a colored glass is placed of precisely the same shade of color as I suggested yesterday. Of course, being larger and firmer, it requires more machinery to operate it. An instrument of that kind would in all probability cost \$125 or \$200 to get up, that is so far as this part of it is concerned, but it is placed here for your information so that any one who desires to go into the business on a large scale can have an opportunity of studying it, and of doing just what he may desire.

Now I want to call your attention to another subject that is very important, and I shall not occupy very much time in speaking of it. It is the matter of quick proofs. You are all aware that it would be a matter of very great importance to photographers to present their customers, before they leave the gallery, with some evidence of the fact that a good picture of them has been secured. This can be done in the readiest manner possible by means of the thinner paper known as "A." You can take your negative while it is wet after you



have washed out a reasonable amount of the hypo from it—that is washed it as thoroughly as you can within a reasonable space of time—and taking a sheet of paper, wet it well and lay it on the negative, and with a squeegee run backward and forward on it and lay it in the printing frame without pressing it. Just expose it to the light of the lamp from five to ten seconds according to the degree of density of the negative. The reason why you don't close up the back of your printing frame is to avoid crushing into the negative. Now take the back out, remove your negative with the print sticking to it and drop it in the water. Immediately you do so the bromide paper falls off, and laying it in another dish you develop it simultaneously and you can show your sitter a proof of the negative—the positive. It is so simple, and yet so interesting, that I think every photographer has only to try it to be satisfied that it is a manifest adjunct in the way of successfully carrying on his business. I have received quite a number of private testimonials to that effect, that it has given a great deal of satisfaction to those who have tried it and have continued to use it right along. As a matter of photographic importance I can only urge it upon you, gentlemen, who are photographers of to-day, and who are willing to learn; to look at this matter in its proper light. No person has any right to assume, as I said before, that his sitters, his customers, are going to be guided entirely by his judgment. They claim the right to judge for themselves, and that day has gone by and it has brought a lesson to us, and it is this: that we cannot afford to neglect anything that presents itself with any reasonable show of importance to us, because if we do the likelihood is that it will be fatal to us. When the dry plate came around, very modestly asking for admission, the so-called leading photographers of the day turned up their noses at it, and they never supposed that it would amount to anything in their day, particularly with all the chemical experience which had enabled them to attain success, and therefore they turned up their noses at it. But what is the result? The man next door or across the street who knew comparatively little, took up the dry plate, and where is he to-day? He is the leading photographer and the other fellow is following slowly after him. Now he has to follow after the fellow who took up the new process and showed what good work he could do. In speaking with a man the other day about it, he said that he was doing just so and so, and then the fact was recognized that

he was following the man who preceded him and who before was by no means his equal. I do not mean here to press for a moment the use of bromide paper in ordinary gallery work at first, and for a reason: it is too new. It is too new to be crushed on the public and to be forced on it. But there is unquestionably this fact to be looked at, so far as artistic excellence is concerned. It is just as far ahead of any of the other styles of printing that have been introduced as anything can be, and it is best to give your sitters an idea of what you have got and an opportunity of judging for themselves, and I know and I am positive that wherever intelligent taste leads, those who have got anything like common judgment, will be successful and will be leading and not following. That has been the case with the majority of those who have tried it in the United States.

Dr. ELLIOTT—I would like to ask Mr. Cooper one question, whether you can give us an idea of the density of the blue or yellow glass that you use?

Mr. COOPER—I do not know that I can give you that with anything like scientific accuracy. That color may be obtained by means of a slight tinge of aniline yellow in varnishing and a lighter blue color over the yellow. We cannot get just that tint. That is about as near as I can give you the idea.

Mr. HARRISON—I would like to ask what species of negative would give the best result on bromide paper?

Mr. COOPER—I might say almost any negative that is fit to give a decent print on any form of paper is capable of giving a very fine result.

Mr. HARRISON—The reason I ask the question is, one of the prints exhibited in the hall is much superior to any of the rest in my opinion, and I was wondering what kind of negative it was made from.

Mr. COOPER—I suppose that if any gentleman would pass around the hall he would find that to be the case with some one of the prints in any collection. You would observe that there was one print far ahead of any of the others, and no doubt that was the case because the chemical effect was just right in that case. You know that it is not the quality of a negative so far as the chemical effect is concerned, which makes one negative more beautiful than the other. The figures may be badly posed and badly lighted up, the chemical worker recognizes it at once. There may be absence of artistic effect and a neglect of the posing and lighting. Perhaps that is the case in the



picture which you are now referring to. That is the only explanation I can give. But I do not think it is because there is any difference in the negative.

Dr. ELLIOTT—I move a vote of thanks be given to Mr. Cooper for his very able and instructive lecture.

Agreed to.

The *President*—Discussion is now in order on practical manipulation under the sky-light and in the dark room. Before we open that subject, Mr. Ryder is present and as he was appointed on the committee to report on some changes and additions to the constitution, he will now make his report.

Mr. RYDER—I will say now, Mr. President, that the first information I got of my appointment upon it was upon reading it in the papers at night, as I was not in the room when I was appointed. Mr. Landy and Mr. Bellsmith, my colleagues on the committee, were absent also, and I could not get them together. It would be impossible to get anything done at this convention, so I would ask to be excused. I thought it would be a better thing, instead of appointing a committee on the revision of the constitution, to turn the matter over to your Executive Committee and your Board of Corporators, who would have ample time to work the thing up, and let it be presented at the next convention. It would be quite impossible to do anything now, so I will ask to be excused.

The *President*—What will you do with this committee? We want to get it out of the road. Will somebody make a motion.

Mr. GENTILÉ—I move that Mr. Ryder's report be accepted and the committee discharged. This motion was seconded.

The *President*—It is moved that Mr. Ryder's report be accepted, or rather his remarks or explanation as to why the committee have not made a report on the subject.

The motion was then agreed to.

The *President*—I will now make an explanation about this matter. Mr. Ryder and myself had a long conversation on the boat yesterday, and he was explaining to me the inability of the committee to make any report or to do anything in regard to this matter, so the final conclusion of the conversation was that we would get this committee out of the road and then some one would make a motion for the committee to report at the next convention—that is, appointing a new committee on the revision of the whole Constitution and By-Laws to report at that time. As this committee was appointed for just the specific purpose, and the parties came very near being all

from the same State, it is well to get rid of the committee. The Committee on the Constitution should represent the country, that is the reason we want to get rid of these gentlemen.

Mr. COOPER—I move that a Committee on Constitution and By-Laws be appointed, to report at the next convention, to revise the Constitution and By-Laws.

Agreed to.

The *President*—The committee should be the newly-elected executive officers and the Committee on Incorporation. The Committee on Incorporation are Mr. Brand, Mr. Douglass and Mr. Gentilé. The newly-elected officers represent the country pretty well, and these other gentlemen, all living in Chicago, will make it inexpensive to the association. These gentlemen will have to meet in executive session, that is the understanding, in January, and then probably fix the matter for the next convention. This matter of the revision of the Constitution and By-Laws is a pretty big job, but they can have it all ready for you at the next convention—the incorporation and the revised constitution.

Now we will have the discussion on the practical manipulation under the sky-light and in the dark room.

Mr. JOSHUA SMITH—If there is nothing before the house, I desire some information regarding these medals. I have them in my possession, and I have no authority to give them to the lucky competitors. I wish to know whether I shall turn them over to the lucky competitors without authority or whether I shall keep them till I have authority. I would like to have some information in regard to it.

The *President*—I would state that the executive officers have been unable to have an executive session since we started. It is altogether likely that we will be able to go into executive session to-morrow morning or may be this afternoon or this evening. I suppose there will be no objection whatever to the executive officers settling up finally this matter and also the question of the engraving.

Mr. SMITH—I would ask to be discharged from the committee, with power to turn the rest of the money in my possession over to the Treasurer.

Mr. GENTILÉ—I move that the committee be discharged, and that Mr. Smith turn over the medals and the balance of the money in his possession to the Treasurer.

Agreed to.

On motion of Mr. Cooper, a vote of thanks was tendered to Mr. Smith for the very able

manner in which he has conducted this affair of collecting the money for the medals and carrying out the work.

Agreed to.

Mr. RYDER—As these medals are now turned over into the hands of the Treasurer, some further action will be necessary to get them delivered. I suggest one thing, and there is a little selfishness in my suggestion perhaps. I am going home to-night and I would like to carry my medal with me, and doubtless there are others here who feel the same desire. A motion can be made and carried that the Treasurer shall be instructed to deliver these medals to the parties who are entitled to them. I think it would be well enough to do this. I can get mine engraved at home and I would like to take it with me.

The *President*—I will make a statement of what I consider the only question that will come under consideration by the Executive Committee, and that is the probability that some of the winners of prizes are not members of the association. Now, in Mr. Ryder's case there is no question, and there can be none about his being allowed to take his with him. There is another person present as to whom there is objection. I do not know whether there is any ground for that objection, but still it is our duty to take care of the association, and if the medals have been bestowed upon parties not entitled to them, of course we would be committing an act of gross negligence and a neglect of our official duty if we did otherwise.

Mr. COOPER—I make a motion that the Treasurer be appointed a committee to deliver medals to those members who have been successful competitors and who are entitled to them. Of course I refer in this case to the men who are unquestionably members. The other question can be submitted to the Executive Board.

This motion was seconded by Mr. Joshua Smith.

The *President*—It is moved that the Treasurer be instructed to deliver informally, when there is no question of membership, the medals when called for.

The question being on this motion, it was agreed to.

The *President*—Now let us have something on the sky-light and dark room.

Mr. RYDER—In the first place there are so many here that are regular workers and who are more posted in the work than myself, that I feel rather timid in trying to talk about it. I can say some things however that are to

my mind applicable to the later days of working. In the first place we have now quicker plates and it is possible and beneficial to use more powerful instruments and less light under the sky-light. That is our purpose and principal need, to see how rapidly we can work and get good results giving time exposures. The rule probably for the average work like cabinets and boudoir negatives in general is about five seconds and to be enabled to do that we slow down our instruments and we slow down the light, working the light softer, using with almost everything the hand-screen, interposing that between the strongest source of light and the sitter, so that we get a more plastic effect, more half tones, and by holding the hand-screen through a portion of the time of the sitting insure that soft effect, and then taking it away for a part of the sitting secure by that means the higher lights and the getting of a more rotund head. That is the policy that we pursue in our house. With reference how we shall adjust our sitter to the light, that is something that our man who works the sitter and camera must know for himself. He does that according to his own judgment.

Mr. COOPER—I think, Mr. President, that Mr. Ryder's remark with regard to the time of exposure in which the finest results are to be obtained is unquestionably true. Any man who tells me when I come into a gallery that he makes his exposures just so, gives me the impression that it would be a great deal better if his sitters would go in and come out just so. In many cases that is the only way to make pictures. Mr. Ryder has remarked upon the possibility of modeling your subject by the use of a hand-screen. It is a perfect marvel to me, with the experience I possess, in passing through the country, that the method of working that should commend itself with such force to photographers—I refer to the simple instrument with which he is able almost with the skill of a painter to model the head—is hardly ever used. One or two who have been to the other conventions in which the subject has been introduced, I find have made themselves a hand-screen, and when I would go in I got the impression that that man has gone to the convention, and thinks he has got a brilliant idea. He has gone to work and got something about the size of a handkerchief or the size of a barrel-head and got it fixed there, and after using it for a short time, has thrown it away in the corner where the spiders would have access to it and it is never more disturbed. I almost invariably secure that hand-



screen and give the spiders notice to quit. I then proceed to show him, as best I know how, the manner in which the screen may be used to the best advantage. Generally I believe, after I leave, the hand-screen is used for a short while, but it seems as though it were difficult to implant in the minds of a majority of men the fact that some care is needed to be taken in the production of good work. The first question which a man asks is: "How can I accomplish the thing?" The next question is: "How easy can I do it?" Well, there are a great many easy ways of doing things. But is the easy way always the best? If a thing is worth doing at all, it is worth doing well. How many photographers throughout the United States are there who have got leading positions by means of doing things the easiest and the quickest way they knew how? It is an easy thing to get an operator of this kind, but what good is he when you have got him? It is not so easy a thing to get a first-class man, and when you have got him he is not the man who does the work in the easiest way. In like manner the best things are not to be obtained in the easiest way. If it were, every man would have the best, and they do not by a large majority.

Mr. Decker, of Cleveland, was then called.

Mr. DECKER—I would be very happy to say something on this occasion if I felt equal to it, but I should have desired to have been called on earlier in the session. After our boat ride yesterday afternoon I am not in a talking condition.

Mr. POOLE—*Mr. President*: Just one word. I have been in studios where different language is used by operators to their sitters. I heard a good friend a couple of weeks ago speaking about the matter of exposing a plate; his words and my words are different altogether. It was in reference to the way we would bring about a smile. He said: "Now, give us your best smile." The very fact of talking like that would take away the desire to smile. Now understand me, I do not want the smile that people usually put on. It is a piece of sickly sentimentalism on the face, and it is something I actually abominate. We do not want anything of the kind. But I will tell you what we do want. It is just this, something that will make the eye brimful of mischief, and when you have that you can go ahead. When I have that I have got the expression I want. The favorite expression I use is: "Now, don't smile, but crowd in the mischief as much as ever you can, and when I get that that is just what I want."

Mr. WOODS—I delight in photographing children. I take more pleasure in photographing children than in photographing anything else. It is a pleasure to me to watch their faces. I keep a sharp lookout and when I get a good expression I take it instantaneously.

Mr. COOPER—With regard to the matter of a smile, I think that that is a very interesting thing to study—the smile on a photograph. While it appears possible for an artist to depict the smile which tells you almost instantly when you see it what the smile was about, it is an unfortunate thing, for a photographic smile actually is no smile at all. It is a combination of smile and a large amount of—well they know they are smiling and you cannot smile and know you are doing it and be successful.

Mr. ROLLINS—I will tell you how to get up a smile. I had a German operator, and when he was ready to make an exposure he said: "Now, you shoost smile a little inside." I thought that was a good thing and I always repeat that. If they will smile a little inside, that will bring out the expression.

*The President*—That is a good idea.

Mr. CLIFFORD—This subject has been one of great thought on my part, and I will tell you my method of getting an expression. That is the important thing, as we have heard, to get the proper expression. You tell the person to smile and it is a mechanical smile, it is not a smile of feeling. I never do that, not even to a child. I study the child's nature and what interests the child and what pleases the child. When I get the expression I make the exposure. No sitter ever knows when my exposure is made, consequently I do not miss a good result once in five times. A grown person has to be treated differently. We have to have some intelligence in ourselves and some feeling in order to draw it out in others. That is the hardest study in the whole business. I carry on a conversation with my sitter if they are intelligent. By that means I am able to get the expression which I desire, and make the exposure when they do not know. That is my way of doing it and it is the best way I have found, although the hardest to arrive at.

Mr. GENTILE—I think the St. Louis photographers the most expert at making people smile, and it was done yesterday to perfection. They certainly made everybody on board of the boat smile. The expression and the results will be seen in some of these groups. Now, when you visit the galleries you will see this, consequently I think that their system must be one of the best.

Mr. DECKER—Speaking about smiling, I



would like to make a motion that a committee be appointed to report resolutions with regard to our excursion.

The *President*—That matter has already been attended to. At least I designated a party to fix the resolutions up. They were intended to cover the excursion and the entire period of this week. I was very anxious it should be done in a proper way, and then appointed the following committee to draft resolutions: Messrs. Decker, Gentilé, Dixon, Poole, and Dr. Elliott.

Mr. RYDER—*Mr. President:* As the invitation has been given to speak on the subject of under the sky-light and in the dark room, I thought I would like to step into the dark room a minute; whether I can interest you will be seen. I want to speak of the question that is so important with all, and that is the matter of developing plates. To make it easy, I would liken the development of a plate to an engine with its train of cars. A good engineer will know how heavy his train is, what his grade is, how much he must pull out his throttle to start it easily or quickly. The person who develops the plate does not always stop to think how much time the plate was exposed, what is exactly the condition of his developer, and so, as a rule, he puts on too much steam. He opens the throttle too wide, and by the time he has found that out he has got too much it is too late. The train is off the track, the plate is over-developed, and it results in a waste of glass. The cautionary method is for the man to start slow, and then it is easy to stop before you have gone too far. If you have not gone far enough, it is easy to start it up again. So I believe in the interest of the men who have to furnish these plates, and who have to pay out a great many dollars, this matter should be regarded, and I would like to impress it on the men in whose power it is to save their employers this waste of money, and heedless waste of plates. I would say it is always perfectly safe to start slowly, and start with your developer weak, and go on until you see that you want to go stronger and then it should be done. But the rule is, or at least the practice is, that the developer of the usual average strength is thrown over a plate and it is gone. Lost, when really a good image has been thrown away by not treating it properly and not starting it well. I wish to impress these remarks upon the men who work, not to start the plate too quickly, not to open the throttle wide, but to open it a little way. Begin by starting with some weak developer, and water is an admirable thing in

developing plates. If you use enough of water you may get a great deal better pictures than you will if you use too little of it. Go carefully and go slowly until you know where you are going.

(To be continued.)

## What Our Friends Would Like to Know.

*N.B.*—We cannot undertake to answer communications of a technical character except through the columns of the BULLETIN. Correspondents will please remember.

*Q.*—A. R. writes:—Which is the best way to secure the best white on silver prints?

*A.*—Take care that the whites of the prints do not get too darkly colored in the printing frame; a slight discoloration will bleach out in the toning and printing operations afterwards.

*Q.*—L. F. writes:—Can you inform me through your BULLETIN where I can get lenses reground and polished that have been slightly scratched?

*A.*—E. Weiskopf, of Franklin street, New York, does that kind of work very nicely. See his card in our advertising columns.

*Q.*—T. C. M. writes:—Will you be so kind as to inform me if the contents of Cooper's Developer have ever been published in any of the journals. I mean that developer which is put up in eight ounce bottles and called Cooper's Concentrated Developer?

*A.*—The formula for this particular developer has never been published. It was devised by Mr. Cooper for our publishers, and is a trade formula.

*Q.*—M. C. B. writes:—Will you please inform me where I can obtain appliances for attaching the city electric light, so I can use it in my operating rooms?

*A.*—Read the article upon this subject in the BULLETIN, page 372, by Hector Krause, in the issue of June 26th. We do not know of any one making special appliances for this kind of illumination, but believe that with Mr. Krause's description and the aid of your local electrical superintendent, you will be able to devise a suitable apparatus.

*Q.*—J. R. M. writes:—Please tell me through BULLETIN what is the cause of negatives getting streaky and full of ridges after they have been in alum solution and before fixing?

*A.*—We have never seen just the trouble you complain of. We could tell better if we saw a negative. Perhaps your alum solution contains iron, which would give black streaks where the developer has not been thoroughly washed out.

*Q.*—R. A. writes:—Will you please inform me through the BULLETIN whether aluminium nitrate when added to a printing bath will

harden the surface? Also whether, upon addition of alum to a bath, there is a complete conversion of the silver nitrate into silver sulphate and aluminium nitrate; and if so, is not the silver sulphate partially soluble and injurious to the bath?

A.—Aluminium salts all form insoluble compounds with both albumen and gelatine. It does not matter much which salt of aluminium you use, provided it is soluble. Alum added to the silver bath converts the silver nitrate into sulphate and forms aluminium nitrate. We do not see any particular harm in the presence of silver sulphate in the bath, for it will form silver chloride just as readily as the nitrate will when the salted paper is floated on it.

Q.—N. B. writes:—Will you please let me know if Laudy's Oxy-Calum Light Apparatus will furnish sufficient light to make negatives on dry plates? Also, can one be used six hours in succession?

A.—The apparatus was not devised to make negatives with; but we have very good negatives can be made with it upon dry plates, provided sufficient time is given during the exposure. This is a matter of experiment. The apparatus could be used for six hours' continuously, provided a sufficient number of tubes were ready filled with the charge mixture at the start. The apparatus was only intended to be used for about one hour, and if a light for a longer time is needed it is better to use compressed oxygen, which can be obtained in cylinders in New York and most large cities.

Q.—J. H. T. writes:—Will you please answer the following questions through the BULLETIN. Is the water-mark in the inclosed slip of albumen paper the genuine N. P. A. pense? I had a good floating bath that was a little weak, but made fair prints, and had evaporated a dipping bath to which I added ammonia until apparently all the impurities were thrown down. I let it stand in the sun two days, the solution then being 100 grains strong. I used it to strengthen my floating bath, and litmus showed it to be alkaline. I then dropped in C. P. nitric acid until it was almost neutral, just slightly alkaline, and I let it in the sun until it was clear. Now my prints turn a brown purple in tone as before, but stay a disagreeable red, which changes to a ugly bleached out color after fixing. Can you tell me what is the matter through the BULLETIN?

A.—The water-mark in the albumen paper is the correct one. In regard to your trouble with the bath, we think it is due to organic matter that you failed to eliminate from the dipping bath. We should advise a repetition of the treatment with ammonia and exposure to sunlight.

## Views Caught with the Drop Shutter.

MR. AND MRS. JOSHUA SMITH, of Chicago, will sail early next month for a tour in Europe, where they will remain for about one year. The BULLETIN wishes them a pleasant trip and a safe return with renewed life from their interesting journeying.

KEED & WA. LACE, with their Palace Photograph Car, are traveling through the South. Recently they were at Mobile and Selma, Alabama, where they undertook to "make the old look young, the young beautiful; catching the graceful smile of the child, the winsome expression of the maiden, and the motherly look of the matron." They issue a handsome little paper containing much entertaining matter besides their own and other advertising, and appear to be doing well with their new enterprise.

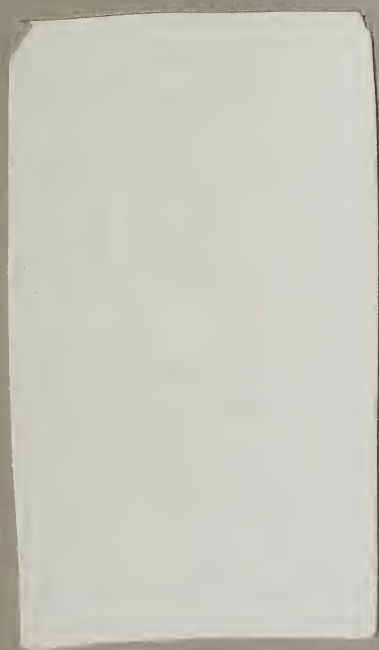
ACTING-SECRETARY FAIRCHILD has instructed the Collector of Customs in New York in cases of exportations of photographic dry plates manufactured from imported glass plates and gelatine, to allow a drawback equal to the duty paid on the quantity of the imported material, less the legal retention of ten per cent. The quantity of material used in the manufacture is to be determined for the glass by adding to the weight of the exported plates 15 per cent. of Dutch weight, and for the gelatine by allowing three-eighths of a grain for every inch of the coated surface.

HERMAN F. DRICHS, a photographer, was found dead lying in a chair in his gallery at No. 163 Springfield avenue, Newark, on August 16th. He had evidently been at work, and held a pipe between his fingers when found. Heart disease was the cause of death.

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ELECTRIC LIGHT PHOTO.  
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**Van der Weyde of London.**

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CELEBRATED N. P. A.  
PENSE ALBUMEN  
PAPER.

# ANTHONY'S Photographic Bulletin.

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Prof. **CHARLES F. CHANDLER**, Ph.D., LL.D., *Editor*.

**ARTHUR H. ELLIOTT**, Ph.D., F.C.S., *Associate Editor*.

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SEPTEMBER 11, 1886.

Vol. XVII.—No. 17.

## THE FUNCTIONS OF A PHOTOGRAPHIC SOCIETY.

BY ARTHUR H. ELLIOTT, PH.D., F.C.S.

[An address before the Photographic Section of the American Institute, at the Annual Reunion at Fort Lee, N. J., August, 1886.]

THE first and most important function of any photographic society is, of course, the encouraging of the advancement of photography. The questions then arise: What will encourage the advancement of this art? What particular course of procedure on the part of the individual members of the society is best calculated to develop the art and attain the highest results for the good of all the members?

Undoubtedly, the first thing to do is to see that the members are what they claim to be, interested in the advancement of photography. This consideration leads to another question. What particular members of any community are thus interested?

In the smaller towns and cities we can count on many people who would undoubtedly lend their influence if their attention was properly called to the subject. Among these, I would mention the men connected with large manufactories, engineers, architects, mill-owners, and those interested in railroads and machinery. These men would appreciate the art for its accuracy and beauty of delineation, and contribute their share to the maintenance of a society for its development. Nothing strikes the eye of an engineer or architect so much as a fine photograph of a beautiful machine or a fine building, and if they could be induced to try their hands at making such pictures, they would better appreciate the wonderful skill of the expert photographer in such difficult work.

Another class of individuals that should be interested in advancing our art is the doctors. Nothing is more interesting to a physician than a series of photographs showing the progress of some disease or the management of some skillful piece of surgery. Again photo-micrography is of inestimable value for studying the etiology of epidemic disease. By the aid of the microscope the physician can see the growth and development of the germs that are devastating the tissues, and photography admirably lends her aid to make permanent records of their evanescent forms. The doctors then should be interested in photography.

Still another class of individuals should be interested. I mean the professors and teachers in our schools and colleges. What better means of instruction could be devised than lectures illustrated by lantern slides? There is scarcely

a single department of learning that does not admit of being taught with lantern illustrations. In astronomy, physics, chemistry, botany, and geology, the lantern pictures are invaluable aids to instruction, and are so much better than the old-fashioned diagrams that any one who has used them would never think of returning to the more ancient forms of illustration. The teachers and professors then are interested in photography.

There is yet another class of the community interested in our art. These are interested, not from any utilitarian ideas, but from their natural keen appreciation of art and art work, and a love of the beautiful generally; I mean the ladies. These are interested in our art because it is beautiful, because it is wonderful, because it is curious; and I don't think sufficient effort has been made to obtain lady members in most of our societies.

In addition to the above lay members of every community who are interested in our work, there are the orthodox professional photographers. Of course these are interested in photography, for by it they live. And I am satisfied that these men are more interested in the progress of any good photographic society than any other class of individuals. Why are they so interested? Because the experimental members of the society can help them; because they can compare their individual work with the work of their fellows and their peers. And those who excel in the art have in the society a stimulus to work in the approbation of fellow workers with kindred tastes. So that there is no question that the best interests of both amateur and professional photographers are insured, when they are fellow laborers in the advancement of the same cause.

Another, and by no means an unimportant, class who are interested in the advancement of our art, are the producers of the materials and apparatus wherewith we obtain our results. What photography owes to these men, nobody can fully appreciate unless he has seen the difficulties they have overcome in making dry plates, and the experiments they constantly make to perfect the ingenious devices that tend to our comfort and pleasure. And why are these men interested in photography? Because the advancement of the art means life to them, and money in their pockets.

These are the various classes of the community that are interested in our art. How then shall a society be conducted that each one will feel at home at its meetings and will contribute to its support?

The engineers and those of allied professions should be encouraged to present material that would interest their fellows as well as the other members. Who amongst us, engineer or not, is not interested in a fine piece of bridge-work or an ingenious machine that works with a precision that is almost intelligent? Who amongst us, architect or not, is not moved with admiration on looking at some stately pile where the mind of the man who designed it looks upward and conceives a structure that carries our thoughts beyond our little span of life into the future and the lives of those who come after us?

The development of disease is not always a pleasant subject to look upon; but the photo-micrographs of the physician, together with an intelligent interpretation of their meaning, do much to enlighten us, and help us to combat the dreadful scourges that often sever from us those that are near and dear.

The professors and teachers, if properly appealed to, could furnish abundant material of interest for a photographic society. The experimental work in photography often executed by this class would be of exceeding great value to



all the members of the society. The ladies who are members of the society could teach us many things in fine taste and matters of an artistic character that would make them an invaluable aid in the development of our art. Every effort should be made to encourage them to come to our meetings, to help us think out those points that make our art beautiful, that make us more manly, give us finer feelings, and generally civilize us. We are inclined to be too rough toward each other; we often lack charity and want of sympathy for the work of our fellows. With ladies around, these characteristics of crude nature disappear, and we feel better for conquering our rough dispositions.

With members of a society gathered from the various classes of the community as I have mentioned, the professional photographer will perhaps think he has little or nothing to do. The man that has that feeling I think makes a serious mistake. Usually the professional photographer has little opportunity for experiments. Perhaps he don't want to experiment. But I think there are few who do not long for a little leisure to try some new method of working or some new effects. To such men the photographic society is an invaluable aid, for there are members who do nothing but experiment. From these the professional photographer can obtain many hints and little devices that will prove useful to him in his every-day work. In turn he could help the experimental members in suggesting new lines of work and new phases of the art to be developed, that he has noted during his daily experiences.

Those who supply the materials with which we obtain our results, should also be encouraged to let us see everything new in their departments. This should be done systematically and with a distinct understanding that the society is not a stock exchange. At some specified time during the proceedings of the society an opportunity should be given for the display of new results upon dry plates and new forms of apparatus, and the time for this exhibition should be specially limited. This would give every one the same opportunity. It might be said that this will be advertising in the time of the society. Well, perhaps it would; but it will be regulated advertising. And if these men have something new, something of value to us, why should they not advertise it? Above all things we cannot afford to miss anything new in the manufacture of plates or apparatus that is conducive to the progress of our art. Therefore give the producers of materials every opportunity to show us new devices that help us either in comfort or the attainment of new results.

I have thus rapidly discussed some of the more important functions of the photographic society. I will now close with a few thoughts upon the awarding of prizes. During the past two years I have been very much interested in the various photographic exhibitions, and although I note much improvement in the methods of giving prizes, yet I think there is considerable room for more. In the first place there is in many cases too many classes in some exhibitions, and too few or none in others. In the case of those exhibitions having a large number of classes, the judges are at their wits' ends to know how to decide the awards, especially if these awards are few in number. In the case of those exhibitions where there are few or no classes, the judges are embarrassed in their decisions when comparing the work of men who excel in different phases of photographic art. Now it appears to me that the best classification of pictures is one where size is the first consideration. Some men can handle large plates skillfully, while others have neither the skill nor the opportunity of working with

large plates. It is therefore absurd to compare two pictures, one, say 18 x 22, and another 4 x 5, that are classified as views. The smaller picture may be the finer photograph, but the skill involved in the production of the larger one is altogether out of proportion to the smaller. Therefore the first consideration should be size. The next point is the number of pictures exhibited of any given size. Some men have no difficulty in preparing a large number of pictures for exhibition, while others have only the means and opportunities to furnish a few. Therefore the number of pictures should be limited to say one dozen for the larger sizes and two dozen in the case of small pictures.

Then the mounting of the pictures should be regulated. The glitter of a fine frame often dazzles the judge's eyes and no such unphotographic influence should be brought to bear on him. The pictures should be mounted in a simple manner.

As to the question of judging the pictures themselves, that is best left to those who are selected for the purpose. But a far simpler classification of pictures than is generally devised is what is necessary to make the work of the judges reasonably easy and cause the least dissatisfaction in their decisions. Such classifications as architecture, groups, portraits, landscapes, waterscapes, marine views, machinery, and so forth, would perhaps be all that is necessary, without further subdivisions. A man that can take a good portrait is often unable to take a group, while one who would make a good group would make a miserable portrait; and the same is true in regard to the other classes mentioned. Men with artistic eyes for landscape views may never obtain good yacht pictures. I do not mean to say these abilities are never combined, but the combination is exceptional and not the rule; each man has his special abilities and their development makes him excel. The awarding of prizes for photographic work is a most admirable encouragement to the art, and what I have said is the result of remembering a discussion of the subject at the St. Louis Convention.

And now, having commented upon the various functions of a photographic society, let me exhort you as members of one of the oldest associations in America, to do your share to encourage those who are willing to advance the art, by giving them your interest in their efforts to develop new phases of photographic work and opportunities to publish their results to the world at large. Let each one work, so that his results may be admired by his fellow men, and every step he takes be to a higher level, till it shall be said of his work

“ It tutors nature; artificial strife  
Lives in these touches, livelier than life.”

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#### EDITORIAL NOTES.

WE note with much satisfaction that the Boston Society of Amateur Photographers has reorganized with the title of “The Boston Camera Club,” and admits professional photographers as members. We think this is a decidedly good change, and feel satisfied that the union of the two classes of workers in our art will be conducive to the best interests of both. The union is no experiment, as witness the Photographic Society of Philadelphia, which is probably one of the most healthy organizations of the kind in the United States.

THE annual reunion of the Photographic Section of the American Institute was held at Fort Lee on August 26th. Quite a number of veteran photographers

were present, together with many younger members of the fraternity. A most delightful day was spent upon the banks of the Hudson River, and a very pleasant dinner party ended what proved to be a thoroughly interesting gathering. We give elsewhere a report of the proceedings.

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M. CH. MOUSSETTE, of France, obtained a photograph of lightning which undoubtedly shows that it has a spiral form. The spiral winds sometimes to the right and sometimes to the left. The turns of the spiral are alternate, sometimes having a greater width than the stream, and sometimes less.

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AT the late meeting of the American Association for the Advancement of Science, held at Buffalo, N. Y., Mr. B. A. Gould gave a very interesting account of "Photographic Determinations of Stellar Positions." He rapidly reviewed the work done by Prof. Bartlett, of West Point, and Mr. Rutherford, of New York, and then gave an account of some of his own work in the same field in South America. We hope in an early issue of the BULLETIN to give our readers an opportunity to read Mr. Gould's highly interesting paper.

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THE English Convention of Photographers met at Derby on August 12th, 13th and 14th. This inauguration of an English Association of Photographers is largely due to the energetic work of our good friend, Mr. J. Traill Taylor, the Editor of the *British Journal of Photography*. We are glad to note that he was the first presiding officer, and are satisfied that the honor is well deserved and fully appreciated. We are indebted to Mr. Taylor for advance sheets of the papers read at the meetings, and these will appear in the BULLETIN.

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WE call the attention of our readers to the letter of our Special Correspondent under "English Notes," where they will find an interesting account of the general proceedings of the Convention held at Derby.

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GREAT results are expected from the photographic work upon the recent eclipse of the sun, which was observed by a party of astronomers in the Southern Hemisphere. A telescope with a lens of forty-feet focus was used to obtain the photographs, which are six inches in diameter. The pictures obtained are expected to show the nature of the corona and the existence, or not, of an atmosphere upon the moon. In this latitude the eclipse was so small as to be of no value for making observations.

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ACCORDING to a cablegram message to the *Eye*, of Chicago, received from the Photographic Convention held at Braunschweig, Germany, Messrs. Decker and Wilbur have received first prize, and probably Mr. Ryder second prize, although there appears some doubt about the name in the latter case, that of Ridden being given. Barker, of Niagara Falls, also gets a medal. These gentlemen were all prize winners at St. Louis, each having received a gold medal.

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*All communications for the columns of the BULLETIN should reach us on Monday preceding the day of issue, to insure their publication at that time.*



## THE EXHIBITION OF PICTURES AT ST. LOUIS.

## CONCLUDING NOTICE.

GEORGE H. RIPLEY, of Brooklyn, exhibited a number of examples of work done on his plates. These were mostly instantaneous pictures made with the Hoover shutter. They were remarkable for sharpness and fine detail in the shadows, in addition to being very artistic in composition. The prints were from negatives about 14 x 17 down, and some of them were remarkably short exposures, one that we noted being marked as taken in  $\frac{1}{160}$  of a second. The subjects were principally scenes in and around Philadelphia, showing many beautiful views near the Quaker City.

Arthur & Philbric, Detroit, Mich., displayed two handsome frames of cabinets, with a few medallions, which in every respect were very good. The lighting and posing, as well as the arrangement of the exhibit, bearing evidence of patient work and good taste. In addition to the above we noted a fine large portrait and a large half-size picture of a child, both good, but a little lacking in detail near the edges. The groups of children exhibited graceful posing and fine lighting effects.

Miss Lou Jones, Hazlehurst, Miss., had an exhibit showing good posing and lighting, the pictures being open to improvement in printing and vignetting.

J. W. Clark, Mendota, Ill., had eight cabinet pictures of excellent quality in every respect. We hope to see more work from this studio next year.

Tomlinson, of Michigan, also had a small number of cabinets that were very good, and he should have sent more examples of such evidences of his good taste and skill.

Clench, Iowa City, Iowa, sent twenty-four fine cabinets, all excellent. Also a number of small views and groups that were very good, especially the groups of children.

L. Walker, Philadelphia, Pa., contributed fourteen large pictures, heads, half and full figures, which were most excellent work in every respect. The posing was notably graceful and the lighting very effective.

Truesdell, Springfield, Ill., exhibited three frames of large heads and one frame of ordinary sizes with a very pretty medallion in the center. All these pictures were good work, sharp and well finished.

F. A. Rankin, Eugene, Oregon, had a fine series of stereoscopic views, characteristic of that section of the country. These embraced architecture, landscape and river views. Also pictures of Indian life that were sharply caught and very life-like. In addition we noted a number of fine 5 x 8 views, also of Indian life and its surroundings.

R. Maynard, Victoria, British Columbia, displayed a number of fine examples of statuesque pictures. Among the other pictures we noted several excellent panels, some exquisite mosaics of views and portraits, also a lot of children's pictures in ordinary styles, but very happily caught.

A. S. Addis, Chihuahua, Mexico, sent eighteen 5 x 8 views of Mexican street and landscape scenes. All were finely caught and well-finished.

At about this point in the exhibition, we noted a series of fine photographs of machinery of various kinds. There was no name on them to indicate who was the exhibitor. They were pictures of the first order in this class of work, and we are sorry we cannot tell who made them. This kind of photography is

technically the most delicate and difficult to secure good effects with, and the exhibit we are talking about was fine in every respect.

Stuber & Bro., Louisville, Ky., contributed a handsome oak frame with large heads and three-quarter panels of fine work. Also a number of beautiful cabinets.

A number of fine views of Santiago, Chili, from B. Eichelman, were shown by Al. S. Robertson, of St. Louis. Among these we noted Flores Chilenas, by Diaz y Spencer, a handsome mosaic of beautiful Chilian ladies. Also a number of 8 x 10 views of geysers, castle architecture and mountain scenery, all exceedingly handsome.

Phelps, of New Haven, Conn., contributed seventeen 10 x 12 pictures of fine quality. These consisted of heads, half and full figures, and showed good taste and photographic skill of a high order.

Von Sothen, the United States submarine engineer, sent a set of prints from his remarkable pictures of the Hell Gate explosion at New York. These were very interesting views, showing the progress of the explosion at intervals of about  $\frac{1}{10}$  of a second apart. We also noticed in this exhibit a very fine photograph of lightning.

Kimball, Concord, N. H., exhibited a number of fine panels, also some large heads and 5 x 8 views. The portraits of gentlemen were very good and full of character.

E. K. Talcott, of Boston, Mass., had an interesting display of pictures mounted in a peculiar manner. The picture is practically hermetically sealed behind a piece of plate glass, the object being to exclude all atmospheric influences that might deteriorate the prints. The pictures appear to be in absolute contact with the glass surface, and the effect produced is beautifully soft.

N. L. Stebbins, Boston, Mass., had a very interesting collection of views of yachts and steamers; these were 8 x 10 pictures, and remarkably clear and sharp pieces of instantaneous photography. He also had a number of interesting Mexican scenes, full of life and characteristic of the country.

Waide, Quincy, Ill., exhibited a number of 14 x 17 portraits and a neat collection of cabinets. These were all good work, carefully executed in every case. We regret to note that some scoundrel, with a brain of the lowest order of intelligence, maliciously pasted a stamp photograph upon one of the faces in the 14 x 17 pictures. We extend our sympathy to Mr. Waide as a sufferer by this vandalism.

Schneider, Columbus, Ohio, contributed some large heads and two views. The heads were admirable pieces of work, and one of John T. Raymond, of Col. Sellers' fame, was exceedingly fine and life-like. The views were artistic and well finished.

Beverage, Marshalltown, Iowa, had a fine display of cabinets. All were good pictures, and showed much photographic skill.

Last, but by no means least, we note a handsome exhibit by Sittler, of Springfield, Ohio. This contained a number of large portraits and full figures; also four handsome frames of panels and small pictures. This exhibit was very good work in every respect. There was a great uniformity in the results exhibited, showing careful management of the subjects and attention to many details that go to make handsome pictures.

We have now completed our review of this great exhibition. Those exhibitors

we have not mentioned must not feel unkindly towards us, but must remember that we could only mention the important exhibits, and the number of these was much greater than we anticipated. Many whose names do not appear in this review have nobody to blame but themselves; for in a number of cases it was impossible to find out who the pictures were exhibited by. Others spoil their work by careless printing and toning. To all these we say, try again, and remember that what another man can do, you also can accomplish and perhaps excel in. It is only by comparison of a man's work with that of his peers that he can tell how to rise to their level. Look to a high standard in your art, and you will find that your efforts to reach it will be noted, not by those who seek to flatter you, but by men who are independent enough to mark your faults with charity, and ring your praises when you excel.

"Be noble! and the nobleness that lies  
In other men, sleeping, but never dead,  
Will rise in majesty to meet thine own."

We cannot close this review without acknowledging our indebtedness to Mr. E. M. Estabrooke for his kind assistance in taking notes of the exhibits. With such a helper the work became easy and interesting throughout.

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#### THE PHOTOGRAPHERS' ASSOCIATION OF CANADA.

THE annual meeting of this Association was held at Toronto from August 16th to 18th. About one hundred and twenty members were present, and the proceedings were interesting. Considerable discussion was entered into about the development and fixing of negatives, in which we note Messrs. Edgeworth, of St. Louis, and David Cooper, of Rochester, took part. This discussion did not embrace any points not discussed in the proceedings of the Photographers' Association of America.

The exhibit, although not a large one, was mostly good work; but the photographers of Toronto did not appear to take much interest in the convention. This is to be regretted, because we can assure them that the men who would succeed in our art in the future must certainly work with their fellow artists, and show some regard for the general good against mere personal selfishness. But the number of such men is growing rapidly less, and photographers generally are working together for the good of the art, and, indirectly, their own advancement. Among the exhibits at Toronto the displays of Cramer, of St. Louis, and the Eastman Company, of Rochester, were the most prominent.

There was quite a number of Americans present, including Joshua Smith and wife, of Chicago; C. Gentilé, of the *Eye*; R. Goebel and wife, of St. Charles, Mo.; Mr. Clarke and wife, of the *St. Louis Photographer*; Mr. Gross, of New York; David Cooper and George Eastman, of Rochester; Edgeworth, of Cramer Dry Plate Works; W. H. Allen, of Detroit; W. V. Ranger, of Syracuse; and George A. Ayres, of E. & H. T. Anthony & Co.

Excursions were arranged for the entertainment of the visiting photographers, and all had an enjoyable time. We wish our Canadian friends every success in their endeavors to build up a photographic association, for it will assuredly be conducive to good feeling among the majority of its members and a stimulus to our art.



## ORTHOCHROMATIC PLATES.

PHILADELPHIA, August 30, 1886.

*To the Editors of the BULLETIN.*

VICTOR SCHUMANN, whose important researches in orthochromatic photography are now so well known and appreciated, makes one statement in your last issue which is not strictly correct. He says "nothing is known yet which even approachingly would make bromide of silver so sensitive to the weakly refractive rays as cyanin." It is true that no other substance produces so much sensitiveness to the orange and reddish-orange of the spectrum, but it does not appear to increase sensitiveness to the still more weakly refractive rays between A and B, to which my collodion emulsion chlorophyl plates are exceedingly sensitive. In fact, while all shades of red come equally well on chlorophyl plates, only orange and light reds come well on cyanin plates.

I am convinced that chlorophyl will not be very much used, owing to the objections to collodion emulsion; but it certainly gives some results that no other sensitizer can, and it may be well not to lose sight of this fact.

I am now preparing some interesting illustrations of experiments in this line, which I hope to be able to send to you in a few days.

Respectfully yours,

FRED. E. IVES.

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**THE AMERICAN INSTITUTE: ITS PAST AND FUTURE.**

BY D. R. GARDEN.

[Address before the Photographic Section of the American Institute at the Reunion at Fort Lee, August, 1886.]

THE American Institute is now nearing the fifty-seventh anniversary of its incorporation. During these long, varied, and eventful years, its fostering influence has given an impetus to American genius which cannot be accurately calculated.

Scores of inventions have, through its annual exhibitions, been introduced to the great bustling world, their utility recognized, and the inventors benefited. The awards to science and art have amounted to hundreds of thousands of dollars. The benefits bestowed on the human family would amount to untold millions; for if we were deprived of the ordinary comforts and luxuries which the majority in these days enjoy, what a crude, cheerless world this would be! The unattended fruit tree will grow, but its fruit will be shriveled and tasteless; but under the attentive care of scientific experience, its strength would be invigorated, its foliage luxuriant, its fruit plump and luscious.

The long, healthful life of the American Institute is owing to the foresight, care, and attention of those into whose hands its interests have been committed. Many analogous societies have sprung into existence with very many promises, but all have silently sunk into obscurity; nor has one had a syllable on the page of history.

Of the Sections of the Institute, none is more progressive than the photographic art. On the 26th of February, 1859, a preliminary meeting for the organization of a photographic society was held in the lecture-room of the American Institute, and on the corresponding day of March, John W. Draper, Peter Cooper, Lewis M. Rutherford, Charles Wager Hull, R. Ogden Doremus, Charles A. Joy, Samuel D. Tillman, Napoleon Sarony, and fifty-three other

prominent and well-known citizens, completed the organization of the American Photographic Society. For the first five years Dr. John W. Draper was President. From that time (1864) till April, 1867, Mr. Lewis M. Rutherford was President, when the Society amended its Constitution and By-Laws and became a Section of the American Institute in May, 1867, with the following officers:

Lewis M. Rutherford, *President*; John W. Draper, Charles A. Joy, Abraham Bogardus, *Vice-Presidents*; Charles Wager Hull, *Corresponding Secretary*; Oscar G. Mason, *Recording Secretary*; Henry J. Newton, *Treasurer*.

Of this family circle of officers, but one rests from the activities of life—Dr. John W. Draper; and this convocation is graced with the presence of two gentlemen whose names shadow over and above every active camera: Mr. Henry J. Newton and Mr. Oscar G. Mason.

On June 10, 1867, the eighty-third meeting of the Association, and first under its new title, was held. Among those who took part in the primal meeting were Mr. Charles Wager Hull, Mr. D. C. Chapman, Dr. P. H. Van der Weyde, Prof. S. D. Tillman, Prof. Ogden N. Rood, and Mr. Henry J. Newton.

From this initial meeting the Section has continued peacefully, successfully. It has witnessed great advancement in its art-science in the Old World and the New. It has greeted the springing into active life of photographic societies all over this broad land. Within these expanding circles are numbered many honored in other branches of science; many who practice its intricate details, and are urged on by the pleasure its scientific results develop.

Photography is to art what the luxuriously equipped transcontinental express train is to the four-horse mail-coach of other days; what the telephone and telegraph are to the old methods of mail conveyance; what the modern improved house is to the homes of our forefathers; what the electric light is to the "lamp of other days." But I need not dwell on those things which "you yourselves do know."

As to the future of the American Institute, inferring from the past, we predict a prolonged career of usefulness. Amidst its earliest and latest years is entwined in its history the name of Mr. John W. Chambers, who now, in his serene and venerable days, can recall the frail infancy of this Institute, and whose fame did not extend beyond the New York City of fifty-two years ago.

The possibilities of photography in the future, who is there bold enough to predict in what new arenas of science or of art it may be used for pleasure, and the profit of future generations?

To many of you gentlemen who have been the pioneers, and have helped along and watched over the progress of your photo art, it will ever be a verdant pleasure for your thoughts to wander away and dwell with a lingering fondness upon the days which are no more.

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[From our *Special Correspondent*.]

### ENGLISH NOTES.

#### THE CONVENTION AT DERBY.

THE "Photographic Convention of the United Kingdom" of Great Britain and Ireland held its first annual meeting at Derby, a town situated nearly in the center of England, on Thursday, Friday and Saturday, the 12th, 13th and 14th of August.

The commencement was fixed for nine o'clock on the morning of Thursday, and when I found my way to the meeting place—The School of Art—I found there a good, if small, collection of photographs and apparatus laid out for the inspection of members.

At a little after the announced hour, Mr. J. Traill Taylor took the chair, while the Honorary Secretary, Mr. J. J. Briginshaw, made a brief statement as to the origin of the Convention. He said that public attention had first been called to the matter by Mr. Andrew Pringle through the medium of the photographic press, and that Mr. Taylor and himself had taken up the matter, and, with the aid of the Derby Photographic Society, had issued invitations to photographers generally—both professionals and amateurs—to attend that meeting. At this point the Mayor of Derby stepped forward and gracefully welcomed the Convention to Derby. He congratulated the meeting on the absence of all jealousy between professionals and amateurs, as was evinced by their meeting there in about equal numbers and on equal terms, and to this fact he attributed much of the rapid progress of photography. The neighborhood of Derby contained much beautiful scenery, and he wished them fine weather to enjoy it. In his capacity as Mayor he wished to acknowledge the great assistance rendered to the law by photography in the detection of criminals. A hearty vote of thanks was accorded to the Mayor, and letters were read from Messrs. H. P. Robinson, G. W. Webster, and Captain Abney, explaining the reason which compelled their unavoidable absence from the Convention.

Mr. Andrew Pringle remarked that his name had been mentioned in connection with the origin of the Convention, but that he had abandoned the idea owing to the slender support which he had received, and that the present meeting was really due to the exertions of Messrs. Taylor and Briginshaw. He regretted to see so small an attendance, but the members present were thoroughly representative of their art, and the numbers would doubtless be much larger in future years. For the success of the Convention four things were necessary: The members must (1) avoid personalities; (2) entertain no jealousy of one another; (3) stick to practical work and avoid theory; (4) and keep strictly to the point in any discussions which might take place.

At this preliminary meeting about forty members were present, and the maximum number present during the Convention did not exceed sixty. But almost every man bore a name distinguished in some department of photography. In addition to those named above I noticed Messrs. W. K. Burton, A. L. Henderson, R. Keene, Prestwich, Geo. Mason, Starnes, W. J. Harrison, W. Adcock, W. H. Warner, W. England, W. Cobb, Crosby, Morgan, Kidd, etc., and your countrymen, Messrs. Walker (of the Eastman-Walker Co.), and C. Rae Smith (inventor of the Artist's Camera).

The meeting broke up before ten o'clock, and most of the members at once proceeded to the railway station and took train for Rowsley, whence they walked to Haddon Hall, a magnificent old mansion erected in the fifteenth century, and which now belongs to the Duke of Rutland. The Hall is not now inhabited, but it is preserved in perfect order, and is a splendid example of a baronial residence. It was difficult to tear one's self away from this fascinating spot, but the Midland Railway trains wait for no man, so at four o'clock the photographers set out for Bakewell, the next station on the line, and were conveyed back to Derby by the five o'clock train.



The evening meeting of the first day was fixed for 7.30, and at that hour Mr. W. England took the chair. The first paper read was one by H. P. Robinson on "Success," in which he pointed out that in photography there were two kinds of success—business success and artistic success—and that a desire for the former has pushed aside the latter.\*

Mr. J. T. Taylor then read a paper on "Focusing Objects in Motion." He uses a small cheap telescope fastened to the top of the camera and moved by the same rack-work. Applying the eye to the telescope and using the rack, when the object, as a ship, is seen in focus through the telescope, it is also in focus on the surface of the plate, and the exposure can be made by means of a shutter. Mr. A. L. Henderson had not found the need of such an appliance. In the photograph which he was in the habit of taking annually of the race for the Derby, he stationed a man on each side of the course and focused on them; he then made the exposure as the horse passed between the two men. Mr. Taylor replied that his instrument was intended for occasions, such as yacht races, when it would not be possible to previously secure the right focus.

The next paper was by Mr. Crosby, advocating "Oxalate Development." He said that in making up the developer the oxalate of potash ought to be decidedly acid. He also remarked on the evil effects of the inhalation of ammonia. Mr. Jerome Harrison urged, on the contrary, that ammonia was the active ingredient in a well-known remedy for colds in the head—Dunbar's Alkaram. Mr. W. K. Burton supported pyro development, and the same side was taken by Mr. Taylor, who said that pyro was displacing oxalate in America. Mr. Edwards said that the same thing was going on on the Continent. Mr. England found it best to suit the developer to the plate. Mr. Henderson said his friend Prof. Stebbing, of Paris, always developed the negatives sent to him by amateurs on the principle that they were under-exposed, using a weak solution of ferrous oxalate.

Mr. Taylor next read a paper by W. B. Bolton, showing the necessity for not exposing the developed plate to white light until it was properly fixed. Some people examined their negatives by white light before placing them in the hypo bath, but in his experience such a course always produced bad stains.

Other papers were read by Mr. W. Cobb, on "Instantaneous Photography," Mr. W. K. Burton on "Some Points in Gelatine Emulsion Making," and Mr. W. Harding Warner on a variety of topics, embracing several results at which his long experience as a photographer had enabled him to arrive. Lastly, Mr. Andrew Pringle read a paper on "Daylight Enlargement," in which he strongly recommended the use of sunlight for making enlargements. Mr. Jerome Harrison remarked that in making enlargements there was practically no advantage in stopping down the lens, while it wasted time because it necessitated a longer exposure. In taking a landscape it was necessary to stop down because the objects were at varying distances from the lens, but in the case of an enlargement the subject to be reproduced (the negative) was all upon the same level on the surface of a glass plate. This concluded a good and long day's work.

On Friday morning most of the members took part in an excursion to Dove-dale, a lovely ravine traversed by the River Dove, which lies eighteen miles north-west of Derby. The drive there and back was a long one, but was diversified by several heavy showers of rain. Others went to Miller's Dale, or to Matlock. The

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\* We are in possession of advance proofs of the papers read at the Convention, for which we have to thank Mr. J. Traill Taylor. These will appear in our columns.—EDS. OF BULLETIN.

excursions cannot be said to have been well-managed. There was a lack of competent local leaders, and no printed programmes. But doubtless experience was gained, and all these things will be attended to next year. In the evening the members met again at the School of Art, Mr. R. Keene, of Derby, in the chair, and several papers were read, including one by A. L. Henderson, styled "Pot-Pourri of Emulsion Making." The officers of the Convention for the coming year were then elected, Mr. Briginshaw being again chosen as Secretary, and receiving a hearty vote of thanks for the good work which he had done. It is a peculiarity of the Convention that there is no single leader or President, but that on each evening the chair is taken by a different person, thus securing a variety in the discussions which take place. The vote for next year's meeting-place resulted in favor of Glasgow.

The proceedings wound up with a lantern display, about 120 slides of high merit, by Messrs. A. Pringle, C. Williams, J. B. B. Wellington, Lucas, and others being passed through a single lantern which was manipulated by Mr. John Place, of Bull street, Birmingham. Mr. Place obtained most of the advantages of a double lantern by using a piece of ground glass to cut off one slide while the next was being introduced. A new double slide carrier was used on this occasion, which it is proposed to call the "Convention carrier." It takes slides of any size and instantly centers them. It is simple and strong in its construction, and is beyond doubt one of the greatest conveniences for the lantern operator ever introduced. It has been duly patented by the inventor, Mr. Place.

On the third and last day of the meeting, Saturday, August 14th, no formal business was transacted, but the members met at the School of Art, where numerous groups were secured, varying in size from a 24 x 20 to a quarter-plate. Many of the members then visited the extensive dry-plate works of Messrs. Pollard, Graham and Co., where the "Derwent" dry plates are made. Edwards' plate-making machine is here used, and the average output is at the rate of 240 gross of quarter plates per day. The building is a large factory four or five stories high, and the main principle of its construction is that of building rooms within rooms, a narrow outside passage being left all round the inner rooms which have windows glazed with ruby glass. Thus circulation is rendered easy, while white light is excluded. There is an elaborate system of double doors by which the dark rooms are entered or left. I afterwards paid a visit to the admirable studio of Mr. Winter, where I inspected some of the *genre* pictures prepared for the coming exhibition of the Photographic Society in London. One of these—"The Poet Reading His Own Work," is a really admirable picture, the wearied aspect of the listener being caught to perfection.

A general dispersal of the photographers took place on the Saturday afternoon. Although the meeting was not without its shortcomings, it may be regarded as the commencement of a great work. With patience and forethought on the part of its promoters, a great future lies before the "Photographic Convention of the United Kingdom." Long may it flourish!

TALBOT ARCHER.

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WE have before us a capital little photograph made with the "Ready Photographer." The latter is practically a pin-hole camera, consisting of a light-tight paper box containing a  $3\frac{1}{4} \times 4\frac{1}{4}$  gelatine dry plate, the exposure being made by removing the covering from a pin-hole made in one of its sides. The picture is not sharp, but remarkably good for the apparatus.

## LETTER FROM BERLIN.

BY DR. H. W. VOGEL.

*About Cyanin over Orthochromacy with Ordinary Plates—Azalin Bath Plates and Landscape Photography—Instantaneous Pictures of the Grecian Artist Festival—New Rapid Lens—The Maja Nebule and Photography.*

IN No. 12, page 369, of your excellent journal, Mr. Schumann quotes remarks made and published by me since 1874 about the optical sensitizing qualities of cyanin, to prove that I begin to esteem cyanin. With regard to this, I might remark that for a long time I have known how to esteem cyanin, if properly applied, and that in combination with other color matters, *e. g.*, azalin. I have used the same to advantage for days and years, but that I have had no success with the cyanin-bath process as recommended by Schumann, and have obtained nothing but streaky plates. Similar results have undoubtedly been experienced by Mr. Schumann, as acknowledged by him in the June number of the *Photographische Correspondenz*, page 329, where he says "that the cyanin bath is not suitable for highly sensitive emulsions." He says further, page 337: "If I manufactured plates, I would be in doubt a moment between azalin or erythrosin, cyanin being out of the question on account of its changeableness." I believe this is sufficient for the unprejudiced reader, but I have more arguments at disposition.

In Germany the orthochromatic processes are something well known, and have been tried by a good many. In countries like England and America they are not so well known, and under these circumstances it is not to be wondered at that manifold mistakes are committed. On page 371 of your esteemed journal I noticed an article by Mr. Bierstadt, in which he asserts that by application of color screens upon ordinary plates the same result could be obtained as with cyanin or azalin plates. He then continues: "Schumann says that the success and vitality of orthochromacy rests solely on light filters, such as glasses coated with collodion colored with curcuma," etc., and to which I say: "This assertion of Schumann is a very great mistake. I have already published in my book, 'The Photography of Colored Objects,' page 144 (Berlin, 1885), a wet collodion process which gives orthochromatic photography in ordinary daylight without interposing a yellow screen." On the other hand I have published the manner to obtain orthochromatic photographs by gas-light with azalin or erythrosin plates, without interposing any yellow screen. (See BULLETIN, page 202.) If Mr. Bierstadt or anybody else thinks that he can make the same with ordinary plates as well as with orthochromatic ones, I propose that he take a color table with several squares of red, yellow, green, and blue stained paper in the illumination of say about six gas flames, with an ordinary gelatine plate, and with the same plate bathed in azalin or erythrosin (Mr. Kurtz will undoubtedly be kind enough to furnish him the plates for this experiment). But I beg that he give exactly the same exposure for both plates. Then he will recognize the difference in favor of the orthochromatic plate easily.

I give a reproduction of the photographs I have taken in this way with a portrait lens in 25 seconds' exposure. [See page 527.]

After a little experience with the azalin plates these mistakes will certainly be avoided.

In my last letter I wrote to you about Obernetter's results with color-sensitive

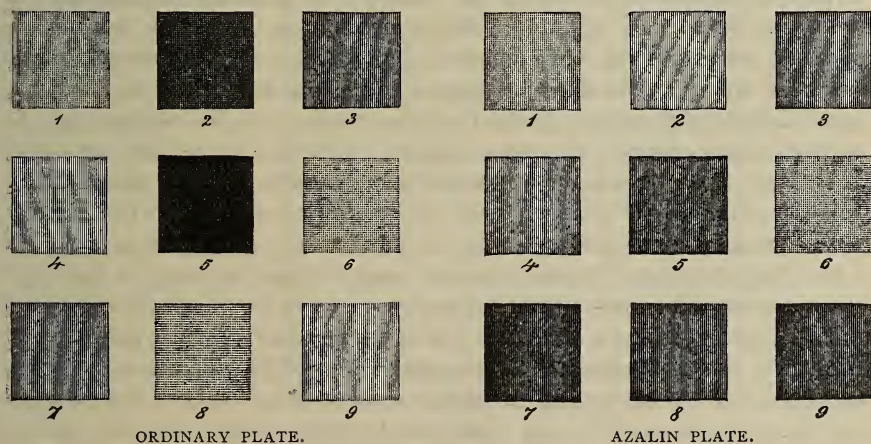


plates having been bathed in fluoride of silver. In the meantime I have made further tests with the same. One evil has arisen. The fluoride plates have no keeping quality; they decompose after three days, although in some exceptional cases they may keep for three weeks. This depends upon the emulsion. At all events this inferior durability is an evil outweighing considerably the advantage obtained. Lately I have found that excellent plates can also be produced without fluoride, namely, by bathing in azalin. In the bath, gelatine will sometimes peel off from the back of the plate when the latter is dirty, and adhere to the face, causing spots. This evil I have almost removed by an addition of alcohol. An alcoholic bath leaves the gelatine particles on the back of the plate intact. For the azalin bath I take

Alcohol (96 degrees).....	30 grams.
Azalin.....	4 "
Ammonia.....	1 gram.
Water.....	70 grams.

Into this bath I plunge, for one minute, a gelatine plate, after which I dry the same. These bath-azalin plates are five times as sensitive as those colored in the emulsion.\* Formerly oftentimes I obtained streaky plates in the bath, but this fault is now removed since the successful production of chemically pure azalin. The development of such plates, bathed in an alcoholic color-bath, proceeds somewhat slower, the alcohol tanning the gelatine film to some extent. An alcoholic bath has also the advantage that it causes a much quicker drying of the plates.

#### COLOR TABLE.



*Taken in gas-light without yellow screen.†*

- |                 |                  |                      |
|-----------------|------------------|----------------------|
| 1. Pale yellow. | 4. Pale green.   | 7. Dark green.       |
| 2. Dark yellow. | 5. Cinnabar red. | 8. Ultramarine blue. |
| 3. Red lead.    | 6. Rose.         | 9. Cobalt blue.      |

The instantaneous process has recently been put here to a pretty good test. A grand open-air artists' festival took place, representing the triumphal march of King Attalus, of Pergamos. 1,100 persons in Greek costume took part in the procession, which did not commence until 6.30 P.M., at which time the sky was

\* To take landscapes with them I expose through a yellow screen (plate-glass coated with aurantia) three times as long as with ordinary plates.

† These cuts are photo-engraved reproductions of ink drawings from a silver print sent by Dr. Vogel, and do not give exactly the true relation of the shades produced; the blacks in the original print are a little darker than represented above, while the lightest shades are practically white; nevertheless the relative intensity of the actinic effects is very well represented.—EDS. OF BULLETIN.

rather cloudy. From 6.30 to 7 o'clock we took six instantaneous group pictures with a Steinheil aplanat, third diaphragm. All showed the same character, somewhat underexposed. Now it is known that if one second is required when using the large diaphragm, the second one requires one and one-third seconds, and the third two and one-half seconds. The second diaphragm required therefore only half as much time, and there remains no doubt that this would have given fully exposed instantaneous pictures, although they might not have been as sharp as desired towards the edges. The conditions in the present case were not favorable, as the views had to be taken at a distance of only twenty steps from the group. This gave larger figures, but also a greater difficulty in obtaining an even sharpness, the groups moving continually. Here it is decidedly more advantageous to work at a greater distance and obtain smaller pictures. They can then be made sharply with full opening, and therefore permit of taking an instantaneous picture under even unfavorable conditions of light. The small picture can easily be enlarged, and the negative so obtained will be equally as good as a direct picture. Mr. Anschütz has worked in this manner. He had a special pavilion built opposite to the temple, where the main festivities took place, and here, between 7 and 8 o'clock, took a number of small instantaneous pictures with a portrait lens, at a distance of about 200 feet. The foreground in some of these being not quite sharp, it was cut off, and thus sharp negatives were obtained, allowing enlargements to 8 x 10 inches, and the prints of these enlarged negatives were fully as good as prints from direct negatives.

In comparison with the high sensitiveness of our present gelatine plates, the strongly diaphanous portrait objectives required for collodion have been placed somewhat in the background. But there are sometimes cloudy and dark days during the winter time (and here perhaps much oftener than in the United States) when a strongly diaphanous objective is an advantage. Voigtlander has recently furnished a strongly diaphanous portrait euryscope, which resembles in its capacity the old Petzval system, and about which the reports of the Vienna Photographic Society are very favorable.

Lately a good deal has been said about the Nebulæ discovered in the Pleiades by means of photography; it has even been asserted that photography had seen more than the human eye. This sounds very nice, but is saying almost a little too much. Dr. Nasselberg, from the Observatory of Pulkowa, writes to me about this: "It is said that the Maja Nebulæ of the Pleiades, first discovered by photography, could not yet have been discovered optically, even with the largest telescope. This is not the case. The nebulae have not only been seen with great facility by several astronomers, amongst others by myself, with a 30-inch refractor, but Mr. Struve has also observed the same and made a drawing of it, as can be seen in No. 2719 (March 4) of the *Astronomische Nachrichten*. Not only with the 30-inch refractor, even with the 15-inch it could be seen plainly." Otherwise Dr. Nasselberg recognizes fully the meritorious labors of the Henry Bros. in being the first to photograph the nebulae. They proceeded with the greatest ingenuity. To be able to control unchanged the position of the total pictures of the stars on the plate with the necessary exactness, they united to their apparatus a second large refractor with 9-inch opening, making one system, so that the whole forms one double telescope, which upon its parallactic mounting follows the stars by clock-work. On the micrometer apparatus of the second refractor the observer can watch the clock-work during exposure constantly, and,



the slightest irregularity taking place, he can place the position of a star back again upon the cross line by means of the fine mechanical arrangements of the instrument, thereby he is enabled to obtain views upon which the stars appear like sharp circular disks, whose size is generally satisfactory in proportion to the luminous size of the stars. Such are the views taken by the Henry Bros. To prevent little spots that may accidentally appear upon the plates being taken for small stars, Messrs. Henry upon each plate always make three views, changing the telescope a little, so that these views will appear each time, forming a triangle, thus . . .—The distance between each spot is about five seconds, and these spots are only visible upon the plate with the aid of the microscope, and then very handsomely.

In our photo-scientific exhibition taking place in September, these star views will also be represented. We calculate also upon interesting scientific communications from America.

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### A SIMPLE WAY TO RECOVER SILVER WASTE.

BY A. C. HOPKINS.

IN common with most photographers I have a small dark room, but because there is a sink and waste-pipe in the room, I do my toning there.

At the end of the sink I had, until recently, a large barrel into which I poured the first two or three washings from my prints, and to which I would occasionally add a handful of salt. When the barrel became full (which took a week or ten days), I put in more acid to clear it up, as directed in a circular issued by the refiners. But I found that it did not clear well, either because I used too much salt or not enough acid, and drawing off the water before it had settled, I knew that I was wasting a great deal of silver. Then too a barrel of stagnant water standing in a small room is not conducive to health or comfort. So I decided to dispense with mine, and found a substitute in the following simple process.

After soaking my prints for five minutes in water made slightly acid by acetic acid, I remove them to another dish, and add to the water from which I have just taken them about a teaspoonful of salt, and stir it rapidly for a moment with the hand, when it becomes as white and thick as milk. This solution I then pour into a common wooden pail, which will hold enough water for the first washing of a hundred prints, and the next day, when I am ready to tone again, I find that my solution has become perfectly clear, and in the bottom of the pail I have a clear white sediment—pure chloride of silver. I then pour off the water to within an inch of the bottom, and the pail is then ready to be filled again.

I find that by adding salt to the second water in which I washed the prints there is hardly a trace of silver, and it is not worth saving. About once a month I pour the settlings from the pail through a fine cloth to filter it, and throw the cloth and contents into the silver paper clippings. In this way I save more than half of the silver used in making the print.

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“No, PAPA, I do not want to marry yet. What I want is a man that does not drink, smoke, go out at night, gamble, bet, over eat, etc.—in short, a man who has no vices and is always good.” “My daughter,” said the affectionate father, “you are but a stranger here; heaven is your home.” And we believe the old gent was right about it.—*Bainbridge (Ga.) Democrat.*



## BRAINS AND JUDGMENT MOST NEEDED IN PHOTOGRAPHY.

BY C. F. MOELCK.

[Presented at the St. Louis Convention of the Photographers' Association of America.]

I WILL endeavor to show in this paper the many obstacles that many photographers have to contend with daily, owing to the lack of judgment and the use of brains.

I will now give the first instance.

I was employed in a first-class photographic establishment in the city of St. Louis, and, taking into consideration the excellent work done, fine negatives produced, I began to investigate how it was done. The proprietor of the establishment was the operator. As I stated above, the negatives were excellent, some of the finest productions I have seen in the West, and it proved that this work was done with what I thought were ordinary instruments. Holmes, Booth & Hayden lens (old style). The proprietor had occasion to absent himself from his place of business and the assistant operator was called to the front to handle the subject and take the place of the operator in chief, to manage the light, pose the subject, A. B. with an elegant dress valued at \$500. After the sitting was completed, I had an opportunity to touch on the result. It was anything but good. It made me shudder with disgust; it had the appearance of a five dollar dress in place of the five hundred dollar as stated. Another appointment was made for a resitting. Now my friends, everything was used except a different set of brains and judgment. An elegant negative was the result; made with same Holmes, Booth & Hayden lens. Were you to see the work you would judge it to be made with some high-priced lens. But it is not this. Where would you be on the deep waters in a craft and no knowledge how to handle the sails? Lost! So with the photographer. He must have the same knowledge to meet with success.

I will not confine my article to different matters in every day work in the studio. The negative made, next comes the paper and printing. Reading the photographic journals, we see so many complaining about the printing and paper.

If you have a formula and it gives you good results, stick to it and do as the formula says. Nitrate of silver is the principal article used; its relation to the others must be the same. Ascertain strength, neutral or acid; as to the season, summer or winter, dry or wet atmosphere. Again, I want to call your attention that when you make a paper bath you must not expect it to last forever, add a little silver every day. Recruit it up as it gets out of order, the same as you yourself get out of order. Your old albumen friend, John Clemmons, of Philadelphia, gave a most excellent remedy for a disordered paper bath some years ago, which a great many seem to have lost sight of; I will give it. Remember, you cannot boil albumen out of the bath.

Take alcohol, four ounces, and a piece of gum camphor. Place the latter in the alcohol to make a saturated solution. Pour a little at a time into the bath until the albumen curdles and comes to the surface, then filter.

These points are worth remembering. The next thing is the toning bath. Chloride of gold is the principal agent; it should at all times be neutral, not charged with soda; but neutral and harmonize with other solutions.

Hyposulphite of soda for fixing is the next. Make a solution as near the same temperature as the other solution used before and you will not be troubled

with blisters and other troubles. Your prints will fix even and clear. As to the other work, such as mounting and burnishing, it must be done in like manner with good judgment and taste. In conclusion, I would say that our art-science of photography is coming out grander and grander; the photographing of the heavens, sound, and other photographic and scientific wonders. Almost daily you have the same chance as your neighbor. The same light shines for you, the same instruments, the same lenses, appliances made by the same firm, sold by the same dealer; but it takes brains, judgment, patience.

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### OUR ILLUSTRATION.

THE picture which we present to our readers as an illustration to this issue of the BULLETIN, is a copy upon a Stanley plate from a number of beautiful photographs of Miss Mary Anderson taken by Van der Weyde, of England, by the aid of the electric light. The original photographs are very fine pieces of art work, in addition to being portraits of a most beautiful subject. Mr. J. B. Hunter has done his part of the work excellently well in copying the originals and making the prints on the N. P. A. paper.

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### MONEY-MAKING.

BY W. J. GUILD.

[Presented at the St. Louis Convention of the Photographers' Association of America.]

THE object of my coming before you to-day is to discuss the best or most successful way of making money, and more especially as applied to our art.

The rules that apply to money-making in our art are the same as those that apply to all other trades or businesses.

You are aware that they appeal to the selfishness of man—pure, sordid selfishness alone is to be gratified by the accumulation of wealth.

As that is the point upon which the merit of these papers are to be judged, you will bear with me for adhering strictly to the point, without regard to its moral bearing.

The dominating idea is to "get all you can, and hold fast to all you get."

This has been the ruling passion in all times past. It is implanted in the very nature of man. It is manifest in the child before it is old enough to talk. It is the first faculty cultivated by the mother, by offering a coveted prize to secure its good behavior. And the grown-up child has to have the coveted greenback held up before him before he will work.

A greenback was held up before the Executive Committee by Mr. Cramer when the question was asked, "Upon what point shall the merits of these papers be judged?" The point was considered as well taken.

It is fostered and encouraged by the laws of our Government. It is largely the motive power of human action.

Our copyright and patent laws are made for the purpose of protecting and encouraging invention by securing to the inventor the exclusive right of his invention.

Then why hold up the process-monger or patent vender to contumely, as has been done by some of our craft, because he, forsooth, was trying to make money by his wits. Our Government says it is his right, and protects him in it. His success in money-making depends upon his exertions and the merits of his patent. The buyer is supposed to be his own judge as to its merits. It is your

greenbacks the vender wants, so pity yourself if you are sold. It is an old adage, "Every man for himself, and the devil take the hindmost."

Nothing, however, is more common than energy in money-making, quite independent of any higher object than its accumulation.

"Seest thou a man diligent in business? he shall stand before kings."

A man who devotes himself to this pursuit, body and soul, can scarcely fail to become rich. Very little brains will do; spend less than you earn; add dollar to dollar; scrape and save, and the pile of gold will gradually rise.

But for the stimulus and protection which our Government has so wisely given to thought (for thought is the father of the thing), what would have been the condition of our art-science to-day? Right where it is with the aborigines.

Then to make money we must think about our business; gather the thoughts of others bearing upon our particular occupation, and hoard them up as though they were money; make ourselves thoroughly acquainted with our business, and then the well-trained hand, guided by a well-stored mind, puts thought into form. All sorts of art are but outward forms of thought, and just in proportion as they possess merit or meet the wants of man, are they of value.

Newton, when asked by what means he had worked out his wonderful discoveries, modestly replied, "By always thinking unto them."

Disraeli, the elder, held that the secret of all success consisted in being master of your subject, such a result being only attainable through continuous application and study.

Raphael lived but thirty-seven years, and in that short space of time carried the art of painting so far beyond what it had before reached, that he appears to stand alone as a model to his successors.

Among those that have received a liberal reward in their lifetime for their works of art, were Rubens, Vandyke, Turner, Rembrandt, Moran (who received \$1,100 for one 11 x 14). Miss Georgiana Campbell, of New York, recently completed an exquisite portrait of one of Vanderbilt's children, for which she received \$3,500, and has orders for more work amounting to \$30,000. Turner probably received more than any other painter; he amassed a princely fortune. Hundreds of others, we might mention have ascended the steps of fame by their indomitable perseverance.

If we expect to approximate the achievements of these great men, we must labor with the same assiduity, yet

"Success, the mark no mortal wit  
Or surest hand can always hit."

It is not possible to lay down any definite rule for each individual. It is said that "Man is the architect of his own fortunes." He who cannot profit by the experience of others, certainly cannot expect to succeed.

The successful man does not go about telling every man (or woman) about his business—he thinks more and talks less. The fool makes no money, for he thinks little and talks, well, "right smart."

You must never tell the world you want money. Want sense and the world will overlook it; want feeling, it will find some excuse; but if the world knows you want money, you are certain to get its abuse.

"The wisest advice in existence,  
Is ne'er on its kindness to call;  
The next way to get its assistance,  
Is—show you don't need it at all."



# ANTHONY'S Photographic Bulletin.

EDITED BY

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Aided by **ARTHUR H. ELLIOTT, Ph.D., F.C.S.,**  
and a corps of practical assistants.

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**E. & H. T. ANTHONY & CO., Publishers.**

## THE BOSTON CAMERA CLUB.

THE Boston Society of Amateur Photographers, after four years of existence without a home, has at last secured permanent quarters and taken a new lease of life. For some time the majority of members have felt that the future of the society largely depended upon the occupancy of rooms exclusively their own with conveniences for practical work, and which would be open at all times for the use of the members. Accordingly, a committee was appointed with full power to lease suitable rooms whenever they could be found.

The building No. 50 Bromfield street, in process of reconstruction, seemed to meet the requirements, and the committee leased rooms there in the name of the society. These are heated by steam, accessible by elevator, and consist of a room with large sky-light, giving opportunities for practicing portraiture, etc., and a dark room, about twelve feet square, with accommodation for several to work at once.

These increased accommodations will, of course, largely increase the expenses of the society, and it was thought best to adopt an entirely new Constitution and By-Laws, which

was done at a meeting held in July. At this meeting the name of the society was changed, and in future it will be known as The Boston Camera Club.

One radical change in the By-Laws is the making eligible to membership of any one practicing photography.

The Philadelphia Society having professional members will be obliged by the rules of the joint exhibition to admit them. It was therefore thought best to make professional photographers eligible to full membership. It also decides, as far as this Club is concerned, the perplexing question of just where to “draw the line.”

A class of membership is provided for those living outside of the immediate vicinity of Boston who may wish to use the dark room and sky-light while in the city, and the Club expects a good number of associate members.

Copies of the Constitution, membership blanks, etc., can be obtained by addressing Committee on New Members, Boston Camera Club, 50 Bromfield street, or the Secretary—  
**JOHN H. THURSTON.**

## THE PHOTOGRAPHIC SECTION OF THE AMERICAN INSTITUTE.

### ANNUAL REUNION.

THE annual gatherings of this old and most interesting Section of the American Institute are always thoroughly enjoyable. The meeting with the veteran workers in our art; the interesting reminiscences always to be enjoyed in the society of such men; and the general good feeling exhibited at these annual outings have to be experienced to be appreciated.

This year the Executive Committee decided to hold the reunion at Fort Lee, on the Hudson River, and a more delightful place to spend a summer's day cannot be found within reasonable distance from New York. No formal meeting was held, but the members gradually reached the place of rendezvous and were met by the Secretary, Mr. O. G. Mason, who directed them to the wandering places of the other members and the points of interest generally. At 4 o'clock in the afternoon the members gathered together in front of a grass-covered bank, overhung with a fine black walnut tree, and several cameras made pictures of the group. At 5 o'clock dinner was served at the hotel and a hearty repast was made upon the following viands:

*Soup.*

Mock Turtle.

*Fish.*

Sea Bass au gratin.

Potatoes.

*Entrée.*

Roast Beef aux champignons.  
Stewed Tomatoes. Carrots and Peas.

*Roast*  
Spring Duck. Salad.

*Dessert.*  
Ice Cream. Coffee.

After dinner, which was thoroughly enjoyed by all, the *President*, Mr. HENRY J. NEWTON, called upon Dr. Van der Weyde to speak upon the subjects of "Photography and Electricity."

Dr. VAN DER WEYDE then gave a most interesting account of his experiences of fifty years ago, when electricity was a mere plaything and photography was believed to be a myth. He spoke of the development of the means of obtaining cheap electricity and the advantages to be derived from its use. Coming to photography, he grew eloquent as he recalled the days when there was no photography. His interesting review of the rise of the art, the memories of the men who first achieved success in it, and whose names are enrolled among the members of the Photographic Section of the American Institute, as well as the references to the modern advances of celestial photography, kept the members deeply interested, and at its close called forth a round of applause.

Mr. J. TRUMBLE SMITH, one of the Trustees of the American Institute, then expressed his gratification at being present at the reunion, and also the satisfaction of the Trustees generally at the flourishing condition of the Photographic Section of the American Institute.

*President* NEWTON—We have with us a gentleman who has done more hard work for photography than any one in America, and I am going to call upon him to give us a few words on what impresses him the most concerning the art. I allude to Mr. Edward L. Wilson, editor of the *Philadelphia Photographer*.

Mr. WILSON addressed the assemblage as follows.

*Mr. President and Gentlemen*: I had no expectation of being called upon to-day, or I should have prepared some thoughts worthy of this pleasant anniversary occasion.

Our worthy chairman does not know what tender recollections he arouses when he asks me to dilate upon what impresses me the most concerning our beautiful art.

A short time ago, when in the mountains of New Hampshire, I unwisely placed my camera, at the head of a recent land-slide, in order to

obtain a view I had long coveted. Just as I reached my holder to place it in the camera, horror of horrors, the rocky *debris* at our feet began to slide, my tripod lost confidence in itself, and we all fell together. I had time to grasp my tripod at the joints, and fell with it in one hand and the plate-holder in the other,

And then we all began to slide and bump down the incline. The commotion we developed was something stupendous. A sectional view of the elevations and depressions we created on the way must have looked like a section of a very hard negative film. My heels were high in air and my arms extended, until we had pranced about one hundred and fifty feet. Then, by an extraordinary effort, I succeeded in planting my heels into the bottom of the slide and the excursion was brought to a halt. I saved my camera, ground glass and plates, and went back and made the view.

I repaired my trousers with a red handkerchief, the only material convenient, which caused a New Hampshire tramp to fire at me for a robin. But I am here and so are the trousers, if there is any doubt about my adventure. That slide still impresses me "most." I was much impressed, too, by the address of my old friend, Prof. Van der Weyde, who has just taken his seat. He gave me a new thought, which fairly thrilled me, when he said that he remembered the time when there were no photographs. Does it not seem strange to us younger votaries of the most wonderful discovery of the age, to look upon a man who can remember when the world had to get along without photographs, and who remembers what a sensation was caused by the birth of our art?

What would the world do *now* without photographs? If such a thing were inevitable there would be a weeping and a wailing and a gnashing of teeth which would be terrible to witness.

But there is no fear of this. At no time since our art was born has there been so much thought devoted to it, and so much promise of advancement as there is now. I was much impressed with this fact, when, during the past few days, I read the exchanges which came to me from various parts of the world, previous to arranging the matter for the coming issue of my magazine.

Why, some of the most distinguished scientists of the world, and some of the most thoughtful amateurs, are pursuing investigations by the help of photography, with results that are simply marvelous.



In all directions they are working, from the deep soundings of the sea to the mysterious clusterings of the Pleiades. Men plunge into the caves and grottoes of the earth and bring forth pictures of the marvels there. The face of the globe is alive with camera collectors of views. The aeronaut bores a hole for the lens in the bottom of his car, and brings back to the earth vast expanses made from the clouds. Far beyond the highest altitude reached by the balloonist the eye-piece reaches and brings before us accurate maps of the starry heavens. Is it not incomprehensible? And in behalf of photography itself, some careful investigations are being pursued which will tend to enlarge its usefulness, its capabilities, and its hold upon the world.

And yet, with all this cheerful outlook, we must not boast too much. For over twenty years it has been my lot to serve as a teacher in our art. Loving art for art's sake, I have loved to teach it. And to enable me to do so I have made pilgrimages to the galleries of the old countries as a student.

But, alas! my heart sometimes goes down, when, reviewing the results of my countrymen at our annual exhibitions, I see how far back they follow what has been taught them.

When I see a fine composition ruined by the introduction of a single incongruous accessory—a good chance lost by neglect of a proper choice of light; a careless placing of the camera ruining every line of beauty in an architectural study—then my twenty years of toil seem but for naught.

But it is not true. Photography *grows*!—grows mightier—grows mightily every day of the world.

We are almost all of us veterans in its cause now. A younger generation is coming up who will see greater things than we have seen, and our art will continue to live and grow. Forever the cry shall come from a charmed world, "*God bless photography.*"

At the close of Dr. Wilson's remarks, Dr. ARTHUR H. ELLIOTT, of the BULLETIN, addressed the members upon "The Functions of a Photographic Society." [See page 513.]

The *President* then called upon Dr. L. H. Laudy to make some remarks.

Dr. LAUDY spoke of his great pleasure at being present at this delightful gathering, and complimented Mr. J. B. Gardner upon the successful manner in which he had made arrangements for the comfort and entertainment of the members. He also gave some pleasant reminiscences of his former association with Mr. E. M. Estabrooke, and spoke of the pleasure that it af-

forded him to know that their friendship had still the warmth of former days.

Dr. JOHN H. JANEWAY, U. S. A., then spoke upon "Professional and Amateur Photography." He remarked that he was satisfied that the best interests of the art would be most rapidly advanced by a union of the energies of the now separate classes of photographers. The true function of the amateur was, as the searcher for the best methods, the experimental photographer; while the professional could carry out the devices learned by the amateur, and in turn direct him into new fields of study that his professional life entirely prevented him from entering.

Mr. D. R. GARDEN addressed the members on "The American Institute: its Past and Future." [See page 521.]

The *President* then called on Mr. E. M. Estabrooke to make some remarks.

Mr. ESTABROOKE expressed his thanks for the peculiarly kind and flattering introduction accorded him by Professor Laudy, and referred briefly to their early intimacy and friendship. He also referred in a few words to his own career in photography, having engaged in the business just at the time the daguerreotype had been superseded by the ambrotype. He spoke of his present engagement as a demonstrator of dry plates for the Stanley Dry Plate Company, and that he had just returned from a long journey in the interests of that Company, and that during that journey many incidents of interest had come under his notice, an account of which might greatly interest the gentlemen present, but time would not permit of such an account at present, at some future opportunity he would not hesitate.

Mr. O. G. MASON, the Secretary of the Section, was then called upon by the *President* to address the members. He said:

*Mr. President:* While listening to the several speakers this evening I have been convinced more than ever before that I must be getting old. When the wonderful story of our wonderful art is related, its steady progress and great achievements, the help it has given, is giving, and promises to give in almost all departments of science, art and industry, and when I remember how very long I had lived before all this began, it seems that centuries instead of tens of years must have passed. The classification, enumeration and suggestions for improvements in old fields, and the entrance of new ones for our profession, have forcibly recalled the scenes through which many of us have passed. How changing they have been, and what an important part of



these changes has resulted directly from the work of photography. The political builders of cities can no longer draw from the pockets of overburdened taxpayers magnificent salaries for an army of "hangers-on," who spend their time in shoveling wind, whistling through cracks in the walls, and nailing the grass down in our parks. Photography has been too much for them. The weekly or daily reports written by the sun and handed in by his agent, the photographer, show how, when, and where money has really been earned.

In our public hospitals the surgeon is careful that the photographic record of his work—which he knows will be seen by his contemporaries and handed down to his successors—shall bring credit to his profession and do honor to his name.

What vivid tales of the wonderful achievements of our great surgeons are told by the photographic records of operations at Bellevue Hospital, how the weak have been made strong and the crooked made straight. It sometimes seems as though patients were sent in by shiploads. When my department was recently filled with bow-legged and knock-kneed children, I could not well help remarking to the members of the staff that it often seemed to me as though Bellevue had taken a contract to straighten all Italy. It has long been and yet seems a big job. Young Italy comes in very much bent, and goes out prepared to grow up to good, straight citizenship, and photography in the hospital history-books tells how the work of change has been done. It shows how crooked Italy was, and how and where the improvement has been made.

But time is passing, and I wish to read to you letters from friends who could not fill seats among us to-night.

Several letters were then read by the Secretary.

The *President* also called on Mr. J. B. Gardner to address the members, but owing to the lateness of the hour it was thought best to postpone these remarks, as well as some from Mr. Wm. Gray, until the meeting of the Section at Clinton Hall on September 7th, when these gentlemen will address the members, and prints from the negatives taken during the reunion will be on exhibition.

After a hearty vote of thanks to Mr. J. B. Gardner, the Chairman of the Executive Committee, for the pleasures he had prepared for the members, they departed for their homes.

In addition to those mentioned above, we noted the presence of George N. Hall, James Wright, Jr., Charles Bolwell, Jr., and the

veteran Alexander Becker. A number of other gentlemen were present whose names we did not learn.

Altogether the gathering was a very pleasant and profitable one, and was enjoyed by all who participated in it.

## THE PHOTOGRAPHERS' ASSOCIATION OF AMERICA.

*Fourth Day—Continued.*

MR. TRUMAN—I have a very interesting question to put before the convention. I was experimenting with iron to some extent, and I found that negatives of different density, over-timed and under-timed, can be brought back to the original printing quality by using iodine in a saturated solution of alcohol, making a strong tincture and combining it with cyanide and reducing the iodine back to a white state and pouring it in the dilute solution over the plate if over-timed. It will bring out the shadows completely. If it is under-timed, you use a little mercury. A saturated solution of mercury, a drop or two in the solution. If you use this, it will give you the full printing quality.

MR. COOPER—Will not the shadows be reduced in proportion to the high lights in the case of an under-timed picture?

MR. TRUMAN—No, sir; the mercury does away with it altogether. I have experimented with it to some extent. I have left a negative in the developer very nearly all night. It was nearly dark, and in treating with iron, and then with the cyanide, I cut it down and made a very good practical negative out of it. It was perfectly intense, free from shadow.

MR. COOPER—I am glad the subject of reduction has been mentioned, because I have been experimenting in that line for the past four or five months, and I will give you the result of the experience which I have had. I think any other gentlemen who will try it will find it extremely satisfactory. It is not very pleasant to use cyanide, that is one reason I object to having much to do with it, or bichloride of mercury. Iodine is also about as objectionable, and it does not make your fingers feel very good after you have used it any length of time. I found, from the peculiar experience I had about three years ago, in developing bromide prints long before the bromide paper was brought into the market—I was operating with some then in the market that after developing with the old oxalate developer, after it had become old it had a very peculiar action on the print—if you had happened to put

that print in hypo without thoroughly washing the oxide of iron out of it. That set me to thinking. I found if I washed rather quickly, and put in the hypo, there would be parts bleached out and other parts bleached red in spots, and there would be black here and there. It of course suggested to my mind that there was a reducing action there, and I determined to find out what it was. Soon after that the potassic ferric oxalate, which is a deposit in the bottom of the bottle in which the old oxalate has been thrown, began to be talked about. I happened to have a bottle containing the green crystals. I tried to use it, and I found out that it was rather too energetic, but by merely treating it to a little shaking, and adding a little water to it, I found that I could bring it into subjection; and now I use it for reduction, whenever it becomes necessary, in the proportion of one ounce in four ounces of water, and add to it an ounce and a half of ordinary hyposulphite of soda. Shake that up and it will dissolve and form a very beautiful green solution. Now, if you desire to reduce the plate, it does not matter whether you use the oxalate or the pyrogallic development. Take one dram of that to two ounces of water, pour on to your plate, and you will be very much surprised to see the quickness with which it is reduced. I will not say, as I have repeatedly heard parties say, that a reduction of the kind is almost entirely in the high lights or in the shadows. There is no reducer on earth that will reduce the high lights and not proportionately reduce the shadows. You can rely upon that as long as a plate has a film. It is one that enables you to see what you are doing, and you can, with careful application, reduce any one and every one that you desire, and in that way obtain good results. As long as you use your finger in flooding it, take a tuft of cotton, but do not rub anywhere else except just the spots you want to reduce, and you will have perfect results, because it is more in the rubbing that you produce the reduction, while at the same time the astringent action of the alcohol prevents the frilling. If you use the potassic ferric oxalate, you will find something which is quite useful and a very pleasant thing to handle; nothing unpleasant about it at all, except any one is disposed to drink it, and I don't think there has been any trouble which has arisen in that way, which there certainly has in the case of cyanide and the other forms of poison.

Mr. BROWN—Where is this potassic ferric oxalate manufactured?

Mr. COOPER—It is not manufactured, and that is where the point comes in, and I think while we are here, that it is bound to be a very important photographic chemical, and it would not be a bad plan for this association to make a note of the fact, and call the attention of the manufacturers of chemicals to it; that it is important, and that it ought so be manufactured and placed on the market for our use.

Mr. HARRISON—I would like to ask a question in this connection, and also remark that I made just exactly the same discovery that Mr. Cooper speaks of, nearly three years ago this month. There was some old ferrous oxalate developer which had been discarded for some time and laid away. I dissolved it in a saturated solution of hyposulphite of soda and made an excellent solution with water, but as I had long ago stopped using the ferrous oxalate developer I had no way of making the crystals. I tried to make up the ferrous oxalate developer, leaving it stand, but I did not succeed. I would like to have some way of making it up, because now the ferrous oxalate has been discarded by most of the galleries. I never succeeded, and I tried very hard, in making up these crystals, simply because I had a portion of the negative which was not right in the first place.

Mr. COOPER—I will explain about the matter, and tell you how sometimes you will be unsuccessful in getting them. You must remember this fact, that where you by the combination of two chemicals desire to produce something which is soluble in water, you must have them—and no question about this—you must have both your solutions saturated, because if you don't, just as quick as it is formed it is redissolved. You see the idea. Another matter. You can always get these green crystals in that way, provided you leave the bottle open, and if you don't you won't.

Mr. WOODS—I have a little dodge in relation to printing which may be of importance. Some negatives are dense in one part and thin in another. I have found a good method of printing from such negatives. By placing it in the shadow, all shadows blur one inch in every ten feet, so that if you put these negatives in the shadow 20 feet from the starting point you have three degrees of light, a shadow, two inches of blur and the sunshine. And it is the power of the sunshine to blur the shadow which makes an even tone—you do not produce it—you have to keep moving the negative as the sun moves. I have made successful prints with negatives that were very dense in one place and thin



in another. I thought this might be of some use.

Mr. GILLS—Right on that point I would say that a few days ago I dropped a plate into my dipping bath (soda) which was not quite full enough to cover the plate, unknown to myself, supposing my bath was full. Now about an inch and a half of my plate was not covered, thus leaving a stain. After the other part was fixed it somehow changed the chemical effects in that. I took it and reversed it, and put it in the bath again and fixed that end, but it still left a stain in that part which was not immersed before. Now the question was, how were we to overcome that in printing? This was done in nearly the same manner as Mr. Woods has described, by holding the stained part in the light by the jamb of the window, and letting the sun shine on that a little more, holding it backward and forward. Another way is by taking a piece of tissue-paper and placing it upon the clearer parts, allowing the stained part to remain uncovered.

The President.—The question has been put if any one here knows how the German photographers make their photographs. I was saying if any of us knew that we would make something like them, but as we don't we don't.

Mr. CRAMER—I think I know one point in which they greatly differ from our practice. I think that they do not fume their paper. A practice in general use here in America, as far as I know, is to fume the paper. And I think a good many make a misuse of fuming, and fume the paper entirely too much. It produces heavy shadows and destroys the fine detail in the negative which we admire so much in their exhibits. I think that there is a good deal in that one point. I think that it is their practice to use a strong silver bath and do without any fuming.

Mr. COOPER—I think that Mr. Cramer is perfectly right. The matter of printing is of the greatest importance in the final result, and I think that there are pictures here on exhibition of American work that indicate that the negatives are equally fine with anything that has been sent here from the other side. But the printing actually loses some of the valuable characteristics of the negative. I thoroughly indorse what Mr. Cramer says with regard to not fuming. Another thing. Long silvering on a comparatively weak silver bath; that is one of the greatest defects throughout the country. I find men now who silver from a minute and a half to two minutes in hot

weather, and I ask them what necessity there is for it. I actually met a man who told me that he silvered for four minutes during cold weather. He might as well have silvered two minutes on one side and turned it over and silvered two minutes on the other. He showed the prints to me, and wanted to know why it was that they looked so meanly, and when we turned the print over it was printed on the back. Says I, "What do you expect? That is what you will get when you silver too long. You are silvering too long." Then he asked me how long he ought to silver, and I asked him how strong his silver bath was. "About forty," he said. "Make it about sixty-five," I said, and silver for a minute and no more. There is no occasion for you to fume more than ten minutes, not the slightest at all. A day or two after I saw that man again, and he said I tried your plan, and I never saw such good work in my life. There is the greatest difference in the world. I met a gentleman to whom I suggested the same thing, and the day after I met him, he told me he was perfectly surprised at the character of the prints he got. He was a printer. The point is this, if you have a strong silver bath immediately you put your paper on it, the strong silver coagulates the albumen on the surface and renders it almost impervious, provided it is a strong silver solution—it renders it almost impervious to the further action of the solution. Now what is the result? You get a print that is right on the surface. It is brilliant, clear and a nice print, not those sunken-in prints which are very bothersome, and you can then have a picture that is printed on the finest piece of film that was ever made; it is just on the surface, and it don't take half the amount of gold to tone, nor does it take half as long to tone it. The fact of the matter is it does not take half as long to print and with far less toning, and you can work quicker than if you silver for two minutes and fume for half an hour.

Mr. GANOWAY—I have had considerable trouble with tear-drops when I was working with a strong silver bath. The long tear-drop is a drop of the clear solution coming up, and there appears to be no way to get rid of it except by using a piece of blotting-paper. I cannot use a stronger bath than 50 grains nor float less than three minutes, without having tear-drops on my paper. The solid drops of the clear solution of silver will just stand out all over the face of the paper, so it will dry up and make it look measly when it is dry.

The President—Your bath is too strong.



Mr. COOPER—I make a point of using a rubber on them before silvering them. With regard to this matter of silvering. Make your bath 65 grains, get a piece of wood and make a regular pad of soft cotton batting, and when you start to silver your paper give it a thorough rubbing back and forth like this [indicating.] Put on your cotton batting and put a piece of cotton flannel on the outside. Then you will have no trouble.

Mr. ROLLINS—I have occasionally had trouble with tear-drops, and it is when I have allowed my paper to become too dry. It is better to keep it damp. When I find I am troubled with tear-drops I put a sponge in my box containing the paper and I am never troubled with them.

Mr. GILLS—I find that I have difficulty at times, especially in uncertain weather, in determining the amount of paper I am going to use. Early in the morning, when I commence to print, my paper may be very dry. I take it by the corners, and breathe on it all over. Raise it up by the corners three or four times, holding it up about ten seconds each time and you will never have any tear-drops. You can get rid of them by drawing the paper over the edge of a dish as you remove it from the tray. Then blow it and then hang it up and you will never have tear-drops. I do not have any and have not had any for years.

Mr. PLECKER—What is the strength of your bath?

Mr. GILLS—Invariably 40 grains.

Mr. RYDER—I will just notice what these gentlemen have said with reference to moistening paper. Sometimes we experience a good deal of trouble during hot weather, when the albumen becomes so hardened that the silver will not penetrate it. Make a point of hanging up the paper in the morning and silvering the night before. Hang it up on boards the same as though silvered, and then wet the floor down. Take a sprinkling pot and make the floor entirely wet and let it stand in that atmosphere through the night. The next morning the paper is limp, the albumen is softened, and it takes to the silver very kindly.

Mr. CORMANY—In case you do not use all the paper, will not this method of dampening the paper injure it?

Mr. RYDER—I don't think it does.

Mr. CORMANY—My experience is that too much dampening is an injury to the paper.

Mr. RYDER—If the water went on the paper it might, but if this method is carried out the surface of the paper will receive the silver prop-

erly, and then we immediately expel all that moisture, leaving the silver in the paper of course.

Mr. CORMANY—Suppose that you should dampen twenty sheets of paper at night and you cannot silver but eight. What would become of the rest?

Mr. RYDER—It is a very bad day when we don't use more paper than that.

Mr. COOPER—You didn't tell us the amount of paper?

Mr. RYDER—The amount of paper you will use will be determined by your usual amount of business.

Mr. COOPER—All the dampness is what the paper will absorb from the atmosphere, and there is no water put on it. There is no likelihood of its injuring the paper to any extent. Quite a common practice among parties who use large quantities, is to put a ream or two in a drawer and always keep in the lower section a basin with a large wet sponge. That will remain there two or three months and the paper is affected by the moist atmosphere in the drawer.

Mr. CORMANY—That is not the case in my climate in Georgia. You cannot do it in the South.

Mr. COOPER—I do not know that in the South it is really needed, for your atmosphere is more moist than it is in the North.

Mr. CORMANY—I moisten my paper for half an hour, put it in the fuming box, allowing it to remain half an hour. That is plenty of time for it to take the silver properly, using nitrate of ammonia with the printing bath a little alkaline and I never have any trouble with tear-drops.

Mr. COOPER—As a general thing if you take the paper at night and hang it up in the room where the atmosphere might pass through, that would make it damp enough in the morning to wring the water out of it in the South.

Mr. CORMANY—You are under a very wrong impression about our weather.

Mr. COOPER—I am a native of the West Indies, and I am pretty well posted as to the amount of dampness that there is there.

The *President*—I would like to say a few words myself on this subject. Now I want you to keep up the photographic smile. It has been criticised here, but you must not be discouraged with the criticism. When you take an impression it is criticised by the realist all out of existence, and the idealist turns round and criticises the other part of it. The realists turn round and criticise all of them and they

have no faith in each other's productions. Now then with regard to the photographer, all of these turn in and criticise the photographer. Now the impressionist's smile is not such a smile as is recognized by idealist or realist. They are dissatisfied with it and of course they are all dissatisfied with the photographic smile. The photographic smile did not settle on them, I think. But keep on getting it all the same. I think it is merely an illusion, just an opinion. Sometimes some people's opinions are not worth very much. Now if you just carry out this idea you will get good effects. I have seen photographic smiles which seemed to me so real that they would make you laugh in spite of yourself. This is about the fact in your own experience. You have seen the same thing. You have seen pictures of babies with the mischief all over the face. That is the real thing we want. You cannot help smiling when you look at them, and that is the kind of pictures you have to make. That is what people call for. Now you should seek to bring this smile on the faces of children especially. I think that the criticism with respect to the case where a smile is coaxed out and worked out is quite correct. Such a smile don't amount to much. It must be got out without any effort of that kind. Each one of course will use his own judgment, but it is very easy to interest the children with some toy, and when you show it to them you ask them if they ever saw anything work like that; they will look at it, pretty soon the smile will come, and you watch for it. Of course the minute you get it you make your exposure, and then you have a photographic smile. You do not want to tell them to look sweet and smile or anything of that kind, but when you have got the smile in the way I have indicated, you can fasten it by making your exposure. These are little dodges which are worth a great deal in the gallery. Always have some new toy with which the child is not familiar.

Mr. Cramer is now ready to announce the names of those to whom the committee has awarded his prizes. This does not make it official, but it is here given as a matter of courtesy.

Mr. CRAMER—With your permission I will read the report.

ST. LOUIS, June 23, 1886.

SEVENTH ANNUAL CONVENTION PHOTOGRAPHERS' ASSOCIATION OF AMERICA.

G. CRAMER, Esq.

DEAR SIR,—We the undersigned, appointed by you a committee to award the five prizes

of \$100 each offered by you for the best five exhibits made on your plates, beg to state that in making these awards we regret our inability to award a prize to St. Louis exhibitors, they being excluded from competing for prizes by their generosity to their guests. We recommend as entitled to your prizes the following five exhibits:

Barker.....Niagara Falls, N. Y.  
Gehrig.....Chicago, Ill.  
Gilbert & Bacon....Philadelphia, Pa.  
Dixon.....Toronto, Canada.  
McMichael.....Buffalo, N. Y.

We wish to state further that many of the exhibits competing for your prizes were mixed with pictures made on other makes of plates, and owing to the difficulty of arriving at a correct conclusion, we resolved to consider only those exhibits made entirely on your plates.

Respectfully,

J. LANDY,  
RUDOLPH GOEBEL,  
S. V. COURTNEY.

The committee appointed for the purpose of drafting resolutions of thanks to the St. Louis photographers, reported as follows:

*Whereas*, The members of the Photographers' Association have been most royally and hospitably entertained by the free and noble-hearted photographers of the city of St. Louis;

*Resolved*, That language is inadequate to express our feelings of gratitude for the grand entertainment provided for us on the boat excursion on the Mississippi River.

*Resolved*, That our thanks are particularly due to the ladies of the various committees for their exquisite taste and grace manifested on this occasion.

E. DECKER,  
S. J. DIXON,  
E. POOLE,  
C. GENTILÉ,

*Committee.*

On motion of Mr. Ryder the resolutions were adopted.

Mr. GENTILÉ—What arrangements have been made with regard to visiting Mr. Cramer's dry plate factory this afternoon?

Mr. CRAMER—The party will start at 3 o'clock from Twelfth and Pine streets. Pine street is the next street south from Olive on which this building fronts. As I have been asked to prepare for this visit and have made preparations for it, I hope you will avail yourselves of the opportunity. You will all be back by 5 o'clock, so you need not be afraid of losing your trains. Now, another point, Mr. President. I have been prevented from



being present all the time, and I do not know whether any discussion has come up as to what we shall do at our next convention in regard to prize medals. Is it the will of the association that prizes should be offered again, or is it your sense rather that it should be discontinued? I would like to have the sense of the meeting on that point, and to have some discussion in regard to it.

Mr. GENTILÉ—In order to bring the matter before the association, I make a motion that this association offer the same amount that it did at the last convention. I think it would be wise to vote the same amount. Very likely the sum may be added to it, as it was before, by voluntary contributions.

This motion was seconded.

Mr. CRAMER—I do not think that this will cover the ground. If we give out prizes we certainly need more than \$200, and as there is plenty of money in the treasury, I do not see why some of the money should not be appropriated for that purpose. If it is the will of the association to have premiums, I do not think it is proper for the association to go around asking for contributions unless they be voluntarily offered. I have had the opportunity of hearing the expressions of a good many who were asked for contributions. They thought the association was rich enough now to pay for the medals. There is a good deal of money in the treasury, and I do not see any reason, if we are in favor of the plan of awarding medals and prizes, why we should not appropriate as much as \$1,000 for that purpose. Then we will be ready for further contributions; but I am opposed to the idea of appointing a committee to ask for subscriptions. I simply want to get the sense of the meeting whether they are in favor of premiums or not. If so, I would recommend that we appropriate that sum, at least; it must be more than \$200.

Mr. McMICALH—I approve of the proposition of Mr. Cramer, and move that the committee be appointed.

The *President*—The question before the house is, shall we appropriate \$200?

Mr. CRAMER—I make an amendment to increase the sum to \$1,000.

Mr. GENTILÉ—I accept the amendment.

The *President*—If you vote to offer \$1,000 for medals, it will be voting to appropriate \$1,000 out of the treasury for next year. Of course you are consenting to have that take place next year as to offering medals. If you vote that down, it will be saying that you are not in favor of having medals awarded. We

will take the sense of the meeting upon that resolution.

Mr. CRAMER—That is the object of my remarks.

Mr. GENTILÉ—I would like to say that I think it is a very good thing to use the money of the association in this manner. It is useless to go on hoarding up any large sum of money for any purpose. It cannot do any good, and there is no better way of using it than in giving prizes. I think it would be better to have a greater number of prizes than we had at the present convention. Of course, all cannot make such displays as Guerin, Landy, and others, but every photographer can make some sort of a display. I think there ought to be some arrangement made by which there could be two grades of prizes.

Mr. RYDER—I would be in favor of discouraging the giving of prizes to the winners at this convention. The man who has obtained a prize once has been sufficiently honored, and he ought to hold off and give the others a chance and not compete. I think it would be a graceful thing to retire after receiving such a mark of distinction. If it could be arranged in that way I should think well of it.

Mr. ROLLINS—I would be opposed to that. If that were the rule adopted they would not send their exhibits. With regard to this matter of giving prizes, I think it might very properly be left in this way: That those who have obtained prizes compete for a larger and better one, and offer the regular prizes to the men who show the most skill in making pictures. If you award prizes in this way, making two classes, there might be a first class for posing, another one for excellence in lighting, another one for excellence in chemical effects, and one for general fine work. Then you will get down to the rights of the matter. There are a number of exhibitors who are capable of making beautiful chemical effects, and there are others who have artistic taste, and this might perhaps be a little schooling for these men and it should not be thrown aside. If they have not cultivated these things they can do so. There is many a man who possesses an eye for careful, artistic work, and who engages an operator that does his work, and between the two they succeed in making something which another man cannot do because he does not think he can afford to have such an operator, and he will have the chance to see what can be done. Those men who can do beautiful chemical work, and who are not posted in the matter of making these artistic



effects, could get a prize for his chemical work if he has shown himself to be pre-eminently successful in that; and when a member passes by and looks at it, he will say: "Why was this man awarded a prize; what was it for?" And the answer will be, "For his chemical work;" and they would look into it and say: "That man has some fine effects; it is wonderfully fine chemical work; I would like to find out how he gets these results." And in that way some who are better, generally speaking, than he, will learn something. Take a man who is a first-class positionist, and perhaps is as deficient in the matter of chemical effect. In this way, recognizing what has been done, he can himself become successful. The same remarks are true with regard to printing and the use of accessories.

Mr. CRAMER—I think the remarks of Mr. Rollins are very proper, and the information is desired by the Executive Committee. We should like to hear all the suggestions which you can make in regard to this matter. I was on the Executive Committee this year, and we tried to do our best. It is the first time the association has attempted to award such a number of medals and premiums. We had no experience. Now if there are any improvements to be made, we would like to hear suggestions, and would be glad to listen to them and to accept them at our meeting. It was suggested there should be two classes of prizes, gold and silver medals; and for the purpose of giving smaller photographers, men in smaller places and men of smaller means, a chance to win a medal, we have discussed the propriety of making two classes, making a difference, and giving a silver medal to one class and a gold medal to another. This, we thought, might be done in this manner by asking each applicant to make his entry either for a gold medal or for a silver medal, but we thought best at that time not to adopt this plan, and simply to give the gold medals to the best and the silver medals to the second best exhibits. If you think differently, and that it is better to adopt that plan and to make different entries either for a gold medal or for a silver one, then the photographer in small places will have a chance to get one of the silver medals, because the other will be excluded from that. Having entered for a gold medal they would not expect to receive a silver medal, and *vice versa*. I desire that the members should express their ideas on this subject. I must also say that we have tried to acknowledge Mr. Rollins' ideas, by giving instructions to the judges to regard all exhibits with respect to their merits in four or five dif-

ferent points, which have all been published in the journals, and I hope they will be all duly considered. I do not think they have been. I do not think his idea is practical to exclude a man from further competition because he has once obtained a medal. I do not think that is right, because by that means you will keep them away from the convention. Make it open to all. If you make a separate class, then they would expect to get either a gold medal or a silver medal, and each one would take his choice. However, I desire to obtain the views of the different members on this point.

Mr. RYDER—I think every man should be left to take his chance.

Mr. CRAMER—That is the very reason for which I advocated this plan. But I desire to get the sense of this meeting. The Executive Committee desires to be instructed, and we do, not wish to do anything which will not conform to the wishes of the association.

Mr. CLIFFORD—Is it not the privilege of the members to receive both of these medals?

Mr. CRAMER—It would not if the plan mentioned is adopted. If any one make an entry for a silver medal he would be excluded from the gold one.

Mr. CLIFFORD—They could only enter then for one?

Mr. CRAMER—Either for the silver or for the gold medal.

Mr. COOPER—Allow me to make a suggestion. Instead of excluding members who have won prizes this year, there should be a sufficient sum of money devoted to the purchase of medals to be competed for by prize men of the previous year. That would be an incentive to these men to do just as fine work as before, if not better. At the same time it would keep the matter before them and not interfere with those who were competing for the prizes of the year. (Applause.)

Mr. CRAMER—That is a very good idea.

Mr. COOPER—That would give the prize-men of this year something to do.

Mr. CRAMER—I have brought it before the convention so as to get all the points, in order that the committee might know what to do, and everybody might be treated fairly and squarely.

Mr. BELLSMITH—I approve of that idea and I think it ought to be carried out; and, furthermore, there should be a grand prize open to all other than the prize winners next year, for we may have a man step in with an exhibit that may overtop everything—a man perhaps whom we have known very little of in the

past, one who has never exhibited in our association; so I think he ought not to be excluded from the opportunity of competing for the grand prize.

The *President*—You mean if a prize shall be created for the prize winners of this year that it should be open to all competitors to enter outside of those who have won the prizes of this year?

Mr. COOPER—That could be done, but at the same time the prize winners of this year might be excluded from competing for the other prizes.

Mr. BELLSMITH—I would like to place that in the form of a motion.

The *President*—I do not think it is necessary; the only object of Mr. Cramer's inquiry was to elicit information for the guidance of the committee, so that they might have a basis to work upon.

Mr. CRAMER—I have not yet the sense of the meeting in regard to the division of the contestants into two classes—for the gold medals and for the silver medals.

Mr. CORMANY—I believe that there are two objections to classifying it in that way which might suggest themselves. An individual might be competing only for a silver medal and another might be competing for a gold one. As to that, I believe it ought to be left entirely to the discretion of the committee finally. As the suggestion is, if a person made an entry for a gold medal, he would not be able to obtain a silver medal, and if he was competing for a silver one, although his work might justify the giving of a gold, he would only receive a silver medal.

Mr. CRAMER—I think that that subject is thoroughly understood. The matter was only brought up to get the ideas of the convention.

(To be continued.)

## What Our Friends Would Like to Know.

*N. B.*—We cannot undertake to answer communications of a technical character except through the columns of the BULLETIN. Correspondents will please remember.

Q.—R. M. writes:—Please inform me, through your correspondence column, how I shall proceed to get a rich warm black tone on the ready sensitized paper. With the formula given I always get a gray tone, and often a violet shade appears on the back of the paper.

A.—In using ready sensitized paper, to get a black tone take care to fume well, say thirty minutes, with good strong ammonia; then print deeply until high lights are decidedly discolored. The paper should now be washed in water with citrate of soda in it, as given in the directions, and toned in a bath very little above the present daily temperature, say about 90 degrees, the bath being decidedly alkaline with bicarbonate of soda, yet not containing a large excess of it. By the above procedure you should be able to get the print of the shade you desire.

Q.—J. B. writes:—In looking over your columns, in No. 14 of the BULLETIN for 1886, I note mention is made of the printing and toning formula of Mr. Hugh O'Neil. Now can you not reprint this formula for the benefit of your numerous readers? My own reason for asking this, is because I have greatly admired Mr. O'Neil's prints that have from time to time appeared as illustrations in the BULLETIN, and I am ambitious to try to imitate them. For the last eighteen months I have been using ready sensitized paper, but I now silver my own and find that I get a good deal more satisfaction. I have tried every kind of toning bath, and for all round work plain bicarbonate of soda is the best in my hands.

A.—Hugh O'Neil's formula is as follows:

### SILVER BATH.

Silver.....	6 ounces.
Water.....	$\frac{1}{2}$ gallon.
Liquid ammonia.....	1 dram.
Alcohol.....	$\frac{1}{2}$ ounce.

Float one and one-half minutes on the above solution. Fume thirty minutes. Put the cup containing the ammonia in a saucer or bowl of hot water when about to use in the fuming box.

Wash the prints well in clean water before toning. This will redden them sufficiently without using acid.

### TONING BATH.

Water.....	$\frac{1}{2}$ gallon.
Bicarbonate of soda...	1 large table-spoonful.
Acetate of soda....	1 teaspoonful.
Anthony's liquid gold, (add just before using).....	1 bottle.

This quantity will tone from 25 to 30 whole sheets of paper, and any tone may be obtained with this formula to suit all tastes.

### FIXING BATH.

Hyposulphite of soda....	1 pound.
Water.....	1 gallon.

Fix for fifteen minutes.



Q.—S. E. W. writes:—Where can I obtain directions for making and coloring lantern slides? I wish to make some from paper negatives measuring  $4\frac{1}{4} \times 7\frac{1}{2}$ . Can slides be used that size, or must I reduce them? What is the best plate to use for lantern slides? Where can I obtain a good specimen of each, a colored and an uncolored slide? If you will answer through the BULLETIN, you will greatly oblige a student of its pages.

A.—The regular size for lantern slides is about  $3\frac{1}{4} \times 4\frac{1}{4}$  inches, and your negatives will have to be used so that the slides can be made that size. We know of no good book on the subject of coloring lantern slides. The transparency plates made by our publishers are first-class for making lantern slides, and full directions are given with them. You may be able to get colored and uncolored slides of the same subjects from McAllister & Co., opticians, Nassau street, New York.

### Views Caught with the Drop Shutter.

MR. JOSHUA SMITH, of Chicago, gave us a pleasant call before his departure for Europe on September 1st. He had just returned from the Toronto Convention, which he said was very successful, considering the short time the Canadian Association has been organized. Mr. Smith kindly promised to send us some letters from Europe during his twelve months' stay there.

DR. LAUDY'S book on "The Magic Lantern" is now ready, and can be obtained from our publishers. This is a thoroughly revised edition of the articles that appeared in our columns during the early part of the year. We need not remind our readers that in this particular class of optical manipulations Dr. Laudy has no rival.

MR. C. D. FREDRICKS has returned from his recent trip to Europe, and is again at his studio on Broadway, New York.

MR. E. LONG, the well-known solar printer, of Quincy, Illinois, has just issued a second edition of his "Art of Making Portraits in Crayon on Solar Enlargements," which contains many improvements.

GEORGE WEST & SONS, of England, the winners of the gold medal for yacht pictures at St. Louis, have written us that they received the medal and admire "its exquisite design and splendid workmanship."

S. T. BLESSING, of New Orleans, La., has now completed his branch establishment at Dallas, Texas, and has closed his Galveston branch. His New Orleans establishment will still remain the headquarters for Southern and Southwestern Texas, Central America, and part of Mexico, owing to lower freight rates than from Dallas. At the latter city will be the headquarters for Eastern, Middle and Western Texas. Mr. Blessing will keep a stock of Stanley and other plates, all Collins' cards, N. P. A. and other albumen papers, ferrotype plates, and all kinds of photographic apparatus in general use, including that from the factories of our publishers. This will be in addition to his well-known frames, moldings and other accessories. His Dallas address is Elm street, and in New Orleans at the old address on Canal street.

SWEET, WALLACH & Co., of Chicago, send us one of the handsomest catalogues of photographic goods that we have seen for a long time. It is a small quarto of 150 pages, beautifully illustrated, and admirably arranged for reference.

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# ANTHONY'S Photographic Bulletin.

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Prof. CHARLES F. CHANDLER, Ph.D., LL.D., *Editor.*

ARTHUR H. ELLIOTT, Ph.D., F.C.S., *Associate Editor.*

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SEPTEMBER 25, 1886.

Vol. XVII.—No. 18.

## WATER IN PHOTOGRAPHY.

OF all the materials used by the photographer, surely the most useful is the universal fluid that covers so much of the earth's surface. But there is water and water. Probably no two wells, no two rivers on the face of the globe, contain exactly the same kind of water, or rather water having the same character. Of course pure water, the chemical compound consisting only of oxygen and hydrogen, is never found in nature in the fluid condition, and what we are talking about is the water found in our brooks, rivers and wells. There are also certain waters containing large quantities of chemical compounds that make them specially suited for medicinal or curative purposes. These latter are excluded in the present discussion, as also is the water of the ocean and inland seas. We will therefore confine our attention to the waters we drink, that are usually obtained directly or indirectly from rivers, brooks, springs, or wells. With all these sources of water, embracing the entire surface of the globe, it is curious that they contain universally the same constituents in greater or less quantity according to their location. The number of these constituents also is quite limited. In all natural potable waters, those used for every-day beverage, we have sulphates, chlorides and bicarbonates of the metals calcium, magnesium, potassium and sodium. Together with these we find a little oxide of iron and alumina, and some silica. These are the mineral constituents of all waters, except those mentioned above as excluded from our discussion. In addition to these, we have vegetable and animal organic matter and the products of its decomposition. For the photographer some of these constituents have little or no importance, such as the sulphates of potassium and sodium and the bicarbonates of the same metals, as these usually occur in small quantities and have little influence upon the chemicals used in photographic processes; and the same is true of alumina and silica, both of which rarely occur in any considerable quantities in ordinary river, spring or well waters. But the calcium (lime) and magnesium salts, sulphates, chlorides and bicarbonates, the chlorides of potassium and sodium, together with the iron oxides and organic materials, are more or less deleterious to photographic processes according to the quantities of them present in the water.

All the soluble salts of calcium and magnesium are precipitated by carbonate of sodium, therefore a water containing much of these substances cannot be used to make an alkaline developer, for the result would be that the alkaline



carbonate (potash or soda) used would give a precipitate of carbonate of calcium or magnesium (or both, if present).

Sulphite of sodium also precipitates calcium salts, giving nearly insoluble sulphite of calcium; the same is also true of magnesium salts, but the sulphite of magnesium appears to be a little more soluble than the lime salt, hence magnesium salts are only precipitated by sodium sulphite from waters that contain considerable quantities of them.

The presence of chlorides of calcium, magnesium, potassium or sodium, prevents the obtaining of clear solutions of silver nitrate, and waters that contain any appreciable quantity of chlorides are of course unfit for the preparation of silver baths. But the presence of chlorides in water, if they occur in any considerable quantities, have a restraining influence upon alkaline development; a fact pointed out some time ago by Dr. J. M. Eder. Dr. Eder recommends that the potash developer should be free from chlorides; it should therefore not be made with water that contains them.

The presence of iron in a water, even in small quantity, will entirely prevent the preparation of clear colorless solutions of pyrogallol, and consequently tend to the production of stained negatives.

Organic matter in water is conducive to the growth and development of germs (bacteria, mold, etc.), and such water should not be used for the preparation of gelatine plates unless it has first been thoroughly boiled before use.

It may not be uninteresting to note what determines the character of a water in regard to the quantities of the several constituents. All of the waters which we are considering are originally derived from rain, which is the purest water generally obtainable by the photographer. But even rain water must be filtered from the dust it collects from the atmosphere in its descent to the earth, and near the sea-shore it is liable to contain chlorides. Rain water is also liable to contain germs, even after the most careful filtration, and should never be used to make gelatine emulsions without being previously boiled.

As soon as the rain water touches the earth it begins to dissolve the various constituents that make up the earth's crust, and these determine the future character of the water. If the rain falls upon granite rocks and those of a like character, very little mineral matter is dissolved, and we then obtain the purest terrestrial waters. These generally contain only one or two grains of mineral matter to the gallon, such as the waters of the rocky States of Maine and New Hampshire. On the other hand, if the rain falls upon calcareous strata, the water becomes loaded with lime and magnesia salts, and may contain thirty or forty grains of mineral matter to the gallon. Examples of these latter waters are found in the northern part of New York State. These waters are given as the extremes of the quantities of mineral constituents in natural potable waters. Usually the water supplied to large cities does not contain over ten grains of mineral matter to the gallon.

We have given the above review of the character of water available for the photographer, and a very little observation on his part, of the structure of the country through which the streams run, will tell him the kind of water that he can obtain from the sources that surround him. Always remember that water is a universal solvent and dissolves more or less of everything it comes into contact with; therefore the crust of the earth upon which it falls will determine the character of the substances it carries into solution.

## EDITORIAL NOTES.

WE have before us the Secretary's report of the Amateur Photographic Association of Victoria, and find it a highly interesting document. The Society exhibits remarkable vigor and is doing a good work among our Australian cousins. Among the papers read we note the following subjects: Photographic Lenses; A Trip to the Western District; Platinum Printing; Collodion Emulsions; Gelatino-Chloride Prints; A Trip through the Central and Eastern Districts, illustrated with lantern slides; Chadwick's Oxygen Apparatus; A Trip to Marysville, illustrated with transparencies; the Tannin Dry Plate Process; and the Carbon Process. Besides these papers there were a number of lantern slide exhibitions. In connection with the Colonial and Indian Exhibition, the Association has on exhibition ten large frames with prints varying from 10 x 12 to  $\frac{1}{4}$  size, over one hundred stereoscopic views, and 120 lantern slides. This is a most satisfactory showing for any photographic society, and we heartily wish our Victoria cousins every success in the future.

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ON August 31st last, M. Chevreul, the eminent French chemist and member of the Academy of Sciences of France, completed his 100th birthday. It is hard for us to realize the value of a life so long and filled with such achievements as his. Think of a man who began the practical study of chemistry in the year 1797, under the direction of Vauquelin, who gave him charge of his laboratory before the pupil Chevreul was twenty years of age. This same man at thirty years of age became director of the dye works and special professor of Chemistry at the Gobelins, a position he holds to-day, with the results of his seventy years of labor around him as monuments of his untiring industry. His researches on the constitution of fats are classic; but the studies which led to the true theory of colors will always make him an object of admiration to all who experiment with light, and therefore of interest to the photographer. These beautiful studies were prosecuted between the years 1828 and 1864, and developed the theory of contrast that produces harmony in colors, and make our homes, our furniture, our fabrics, things of beauty and a delight to our eyes. Chevreul was one of those men that knew Lavoisier, the father of modern scientific chemistry, and he lived before the days of photography. The life of such a man is teeming with interesting reminiscences; but we have only time to note his birthday festival and add our voices to the host that shouts his praises. May many years yet abound with pleasure for one who has done so well.

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FLORENCE, Italy, is to have its first photographic exhibition next May. In a land that is the very paradise of art we surely should have a fine display of the work of those who, with the sunbeams, work in art's domain.

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WE hear that the English expedition sent to photograph the late eclipse of the sun was fairly successful. The corona extended twice the diameter of the sun, with a feathery structure at the poles. The photographs are said to be good, and we shall hear more about them later.

---

WE hear that the American Institute is about to make provision for an exhibition of pictures made by the Society of Amateur Photographers of New York.

We think this would be an admirable idea, and would suggest that the professional photographers of the city also make a display at the same time. This would make the whole affair doubly interesting, and add a new feature to the exhibitions of the Institute.

### LETTER FROM GERMANY.

BY DR. H. W. VOGEL.

*Taking Portraits by Magnesium Light for Half a Cent—Impractical Contrivances in our Landscape Apparatus—The Sensitiveness of Stained Plates—Action of Non-Actinic Colors—Restoring Platinotype Paper—Loescher's Photographs at the St. Louis Convention.*

ARTIFICIAL LIGHT is here the watchword. About the application of gaslight in photography with orthothromatic plates I have already given you my report. The latest is now the attempt to use ordinary dry plates by the magnesium light.

This is nothing new. In 1864 I took a picture by that light, but at that time magnesium was very expensive. Now, since its production by electrical means, it is considerably cheaper. About interiors and groups taken by magnesium light, I wrote to you already in May. [See BULLETIN, July 10th, p. 390.]

These experiments have been continued lately by Dr. Miethe and Herr Haberland, and these gentlemen have obtained such excellent results in portraiture that there is no difference discernible from pictures taken in daylight. Their arrangements are most simple. The magnesium wire, or ribbon, is not burned in a lamp, but is held by the hands, and to diffuse the almost too strong light, it is used behind screens of tissue-paper, placed at a distance of about 75 c.m. from the sitter, the one on the light, the other on the shadow side. The first plates used were Monckhoven's and afterwards Gädecke's. To burn the magnesium wire in lamps proved impracticable, small deviations in the quantity of the supply creating large differences in the illumination, it being almost impossible to determine exactly the amount. The actinic power was also greatly under-estimated, particularly as the proportion of the quantity to be burned at either the light or shadow side was of some importance. For two experiments there was used:

#### I.

Light side.....	$\frac{1}{2}$ m.=0.282 grams wire.
Shadow side.....	$\frac{1}{16}$ m.=0.035 " "

Both were lit at the same time. The light was kept burning for 13 and 17 seconds respectively, and the flame kept pretty quiet. The result was a well-lit and pretty sharp portrait, same as in daylight.

#### II.

Light side.....	$\frac{1}{2}$ m.=0.282 grams wire.
Shadow side.....	$\frac{1}{12}$ m.=0.047 " "

Ignited simultaneously. Lights moved cyclically behind the screens. Result similar to the former. The focusing is done by a kerosene light.

These experiments show that the magnesium used amounts to only 1.9 pfennigs ( $\frac{1}{2}$  cent). This extremely cheap source of light is a fact well worth the attention of practical photographers. It may be predicted with confidence, after these experiments, that very likely next winter, photographers will be in a position



to attend a fancy dress ball with a roll of magnesium wire in their pockets for the purpose of taking portraits during the night in any of the darkened ante-rooms.

Lately I made a grand tour through Norway, taking pictures on the way, and find that our traveling apparatus still needs many improvements. With my 5 x 8 camera I always take three objectives, a wide angle of  $4\frac{1}{2}$ -inch focus, an aplanat of 7-inch focus, and an antiplanat of 10-inch focus. The latter I use for views, depending upon the size of the subject in the picture, without regard to a wide angle. The second serves for medium views (angle of about sixty degrees).

To be able to change the lenses quickly, I generally carry them on separate front boards. Three years ago the Photographic Society of Great Britain proposed the application of interchangeable flanges for the smaller lenses, thus requiring only one board for all. Unfortunately this proposition seems to have met with no favor by our opticians. Another nuisance is the many diaphragms or central stops, which are so easily lost when traveling. It is some twenty-four years ago that Voigtlander & Son had constructed a diaphragm fastened into the lens, which could be enlarged or contracted by a rotating disk. This could not be lost, and why is it they are not constructed any more?

Emulsion paper upon rolls is now introduced in place of the heavy and brittle glass plates. The paper, on account of its light weight and security against breakage has great advantages, but the means to make it transparent are very incomplete, and I believe that by application of small glass plates the same advantage in regard to light weight is obtained. A sharp  $3\frac{1}{4} \times 4\frac{1}{4}$  negative will easily admit an enlargement of from three to six times its size. Enlarged negatives from 12 to 20 inches may be easily produced, and this size is sufficient for most cases.

Captain Himly lately published a number of experiments with colored plates. He obtained entirely different results from mine. I had found that plates bathed in azalin by gaslight are more sensitive than the ordinary ones. Himly, on the contrary, says that by his experiments he can prove that ordinary plates are also more sensitive by gaslight than the colored ones. Lately I have repeated these tests, and find that both of us are right. There are indeed plates, like those of Bernaert, of Gant, which are more sensitive than all others, and whose sensitiveness cannot be increased by coloring (in gaslight). The condition of other emulsions is again different. Some are made more sensitive by erythrosin, others by azalin.

We have got to collect a good deal of experience yet upon this field. To what deceptions one is exposed sometimes, was demonstrated by the observation of one of my students. He made a view from a vermilion-red paper with white border and black type upon an azalin plate through a yellow glass, and with an ordinary plate. It showed that the red had acted stronger upon the ordinary plate—to all appearance—than upon the azalin one. But a closer examination of the plate showed not the slightest trace of the black type, whereas upon the azalin one it showed completely. This is explained by the red field not having acted upon the ordinary plate by its color, but by its surface reflection. Each body reflects from its surface some white light, which is sometimes of some considerable photographic power, and causes a very visible action upon the ordinary plate by even bodies of non-actinic color, for instance, leaves. This surface reflection is exercised by the black type just as much as the one from the red ground, therefore no contrast is to be recognized between them. With the azalin

plate and yellow glass it is different. The latter does not admit the blue light of the surface reflection, which therefore cannot come to action. In return the reflected red rays act upon the red sensitive plate, while black is inactive. The type shows therefore now in strong contrast against the ground.

Platinum printing comes more and more into use here now. The public do not seem to like it yet, and the process is therefore not much cultivated by professional photographers, but by amateurs. It is used for the reproduction of documents. The platinum print is almost absolutely durable, more so than even carbon prints. The high price is also another drawback, a print costing nearly twice as much as a silver one. The paper also will soon spoil if not kept under good cover. I have several times lost some by carelessness of that kind. Borgh now publishes a formula to restore such paper. This is done by Dr. Just's (Vienna) so-called normal iron solution for platinotype prints, at present in the market. One hundred c.c. are mixed with 0.4 grams of chromate of potassium. This is applied with the pencil or a small cotton tuft, and must be used very evenly.

The list of medals given at St. Louis has been published here lately. But although our public fully recognizes the honor of bestowing medals upon two German exhibitors, it feels sorely disappointed that such an eminent firm as Loescher & Petsch, of Berlin, should come out of the contest empty-handed, notwithstanding their large *genre* pictures taken by full sunlight, and their new Vandyke pictures, about which I had reported to you in my letter [BULLETIN, August 14th, p. 456], were on exhibition. That these works of art deserve the highest merit is proven by the judgment of some of our best artists, like Gusocco and our first art critic, L. Pietsch, who ignores photographers generally, but who pronounces Loescher's pictures works of art of the first rank. Of fine portraits we have a sufficient choice, but works like those of Loescher & Petsch, constantly revealing new and original ideas, and in which great technical difficulties (soft modeling in sunlight) have been overcome, are very rare. Their new ideas have had a fruitful effect here upon other portraitists. Mr. Graf, the Court photographer, acknowledges this publicly, although being their competitor. I further recall to mind that twenty years ago Loescher & Petsch opened the way with their studies on artistic illumination, and later on also with their *genre* pictures, which were sold in large quantities to the United States under the title of "Gems of German Life," obtaining the first prize at all exhibitions. And yet notwithstanding adding new laurels to their old wreath, they did not have even an honorable mention at St. Louis.

BERLIN, August, 1886.

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### A GOOD DEVELOPER FOR AMATEURS.

BY PROFESSOR E. L. FRENCH.

LIKE most amateurs, I have tried every new developer I could hear of. With eager expectancy I have awaited the annual coming of the English Year Book, the Photographic Almanac, and "Mosaics," as sure to furnish me a brand new stock of formulas into which I might plunge with infinite zest. I have browsed, too, over all the current periodicals, and been lured into scores of experiments by plausible accounts of negatives which, under some novel treatment or other, were so marvelously clear, brilliant and beautiful as to make my mouth water. Some

way I could never resist the seductiveness of the descriptions, every developer being pronounced as of all others the "most elastic;" best capable of producing negatives of "finest actinic effect;" and guaranteed to "work equally well with all brands of plates." Needless to say that I am older now and have many dozens of spoiled negatives as a record of my asinine credulity. But having at last reached firm ground in this puzzling matter of development, I, too, cannot resist the temptation of giving to my brother amateurs the benefit of my experience, together with the formula for a developer (I think it is Hoover's) which I have used for several months, and unhesitatingly pronounce it the most satisfactory I ever tried. Not once has it failed me, and I beg that you will at least give it a trial as a simple experiment. Here is the formula—the quantity being sufficient to develop at least forty 5 x 8 negatives of ordinary exposure, while the potash being a fixed solution may be made in larger quantities at once to obviate frequent mixing.

#### I. PYRO.

Sulphite soda, c.p.....	(437 grains)	1 ounce.
Dissolve in warm water (melted ice).....		3 ounces.
Citric acid (crystals).....		30 grains.
Bromide ammonium.....		10 "
And lastly,		
Pyro.....	220	"
And water to make 5 ounces.		

#### II. POTASH.

##### A.

Sulphite soda, c.p.....	(437 grains)	1 ounce.
Warm pure water.....		1½ ounces.

##### B.

Carbonate potash, c.p.....		1½ ounces.
Pure water.....		2 "

When A and B are both thoroughly dissolved add them together, with pure water to make 6 ounces.

#### DEVELOPMENT.

Give full exposure. Soak plate in water in developing pan a minute or two, taking care to remove the air-bubbles with a soft brush. In the meantime put into a graduate, one (1) dram of the pyro solution, and fill up with three (3) ounces of clean cold water. In another smaller graduate have ready one (1) dram of the potash solution. Pour off the water from the plate and flood it at once with the pyro, rocking it therein gently for a half minute or so, the time depending on the character of the plate and the density required in the negative. At the end of the half minute tip up your pan, and into one corner pour about one-half dram of the potash, continuing the development. The image will come up slowly and more potash will usually be necessary, a few drops at a time, before sufficient detail is obtained. Sometimes the first modicum of potash will be sufficient where the plate is much over-exposed, but the development is under perfect control all the time. If the subject had sharp contrasts in its lights and shadows, use a less quantity of pyro to begin with; or, with the one (1) dram recommended, double the amount of water, using as much as five or six ounces with the single dram of pyro. If, on the contrary, the contrast is slight and more density is needed all through, as in groups or portraits where sky and water are not included, use full quantity of pyro and develop strongly. Where the plate is under-exposed, and coming up hard, do not add beyond the one dram



of postash first measured, but dilute your developer with water poured in the pan and “*go slow.*”

The “elasticity” of this developer is marvelous, plates with an exposure of one, five and ten seconds, under the same conditions, having been brought out in such a manner that no one could tell the difference. Use chrome alum in the fixing bath, and, as a final result you will have obtained a negative clear as stained glass, and of a fine gray color, verging on black, more nearly resembling a wet plate than that produced by any other developer I have tried.

CHEM. LABORATORY, WELLS COLLEGE, Aurora, N. Y.,

September 11, 1886.

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### OBITUARY.

ERNEST G. LOOMIS.

SINCE we went to press with our last issue, we hear the sad news that one of the brightest contributors to the pages of the BULLETIN has gone to that country “from whose bourne no traveler returns.” Ernest G. Loomis was the son of Mr. G. H. Loomis, the well-known contributor of “Paragraphic Pencillings” to these columns, and had recently sent us articles that made us believe that we had secured a talented writer for this journal. But death cut short a life full of great promise and left us sad at the loss of a co-laborer whom we were beginning to appreciate, and whose intelligence and hearty good humor were a source of great pleasure to us. It must have been pleasant for the father to note that his son inherited tastes kindred to his own; and it must also have been a bitter sorrow to see that young life cut short so soon. To the bereaved father we extend our most sincere sympathies in his misfortune.

Ernest G. Loomis died at Newtonville, Mass., on September 3d, from an attack of typhoid fever. He was only twenty-five years old, and his illness was of very short duration. A personal friend of the deceased furnishes the following tribute to his memory.

Few young men have inspired so many personal friendships, or have been so generally popular among their associates. He had long been known as a young man of frank, affectionate disposition, always ready with a hearty greeting for every one, always affable and cheerful, but it was not until after his death that it was fully realized how promising and well equipped for life he was. Those who shared his intimacy found him possessed of a training and an aptitude that were the sure guarantee of future success in life. Few suspected the interest he took in all the great topics of the day, and how well informed he was on questions usually outside of the knowledge or concern of young men. Occasionally a thoughtfully written article in the daily or local papers could be traced to him, revealing a cultured quality of mind that was the very antithesis of his outward vivacity and humor. This tendency to acquire a knowledge of substantial subjects was often observed in his contributions to the literary societies with which he was prominently connected. These qualities of mind, combined with those graces of character we have already alluded to, endeared this young man to all who knew him, and account for the sincere grief so universal in the circle in which he moved. Although the loss is irreparable, yet memory has its riches as well as life, and the recollection of the blameless life of Ernest G. Loomis will always remain with us as a legacy.

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*All communications for the columns of the BULLETIN should reach us on Monday preceding the day of issue, to insure their publication at that time.*

## PHOTOGRAPHY SHOULD STAND ALONE.

*To the Editors of the BULLETIN.*

As an amateur, thoroughly interested in all that pertains to photography, a careful reader of various photographic journals and the British annuals, I am prompted to say that the most useless and profitless articles I have read are the numerous long-winded and high-falutin arguments and discussions of the subject, "Is photography art?"

It would be about as sensible to discuss the subject, "Is the moon made of green cheese?" I am weary of the seemingly ceaseless flow of words deemed necessary to prove the art of photography, usurping so much space in photographic journals that might be devoted to more useful purposes. Photography, pure and simple, is a science, but it is not art, and no amount of boastful gush or boasting will ever make it so. It must always stand on a level with the copyist, who reproduces the work of the artist, so far as its place as an art is concerned; but it is a most fascinating and delightful science, and occupies a position in the world entirely its own, and of sufficient honor that it is not necessary to compare its work with that of paints and brushes.

Ex-EDITOR.

## DEVELOPERS: MAY THEIR SHADOWS NEVER BE LESS.

BY THOMAS DREW STETSON.\*

LIFE is a developer. I hold in my hand a green bud from a tree. It is not well understood what determines the formation of a bud instead of straight woody fiber; but, having once started, its possibilities are infinite. Cut away the other parts of the tree to throw all its vigor into this bud, or separate it from its woody foundation, and insert it delicately in a young stock and prune away the rest, it will extend and branch and become a tree. And each of the buds on that tree can do the same; and so on indefinitely.

Seeds are a more familiar example. The peck of live rice which a chance visitor presented to the Governor of Georgia has developed until it feeds millions. The people of our Southern States eat it with their meat as we do potatoes.

Time with life is a developer in other ways than growth. Somebody writes:

Her eyes were bright and merry,  
She danced in the merry whirl;  
She took the world in its sunshine,  
For she was a frivolous girl.

She dressed like a royal princess,  
She wore her hair in a curl;  
The gossips said, "What a pity,  
That she's such a frivolous girl."

[TWENTY YEARS LATER.]

She's a wife, a mother, a woman,  
Grand, noble, and pure as a pearl,  
While the gossips say; "Would you think it,  
Of only a frivolous girl?"

The centuries are developers. Some energetic wanderers from the tribe of Theuth, in Saxony, settle in the mineral-stored and fertile island of Great Britain,

\* Response to a toast for the Reunion of the Photographic Section of the American Institute, but omitted for want of time.

adopt the Christian religion, and fiercely attending to it, move again to New England, to New York, and organize the American Institute and Photographic Section.

Inventions are developers. Children young and grown patronize the horse-shoe as an emblem of luck. It is. The horse-shoe is the "bottom patent" for a great series. Without horse-shoes we should not have had hard roads; without hard roads we could never have had wheel carriages; without wheel carriages we could not have had stages; without stages we should never have had railroad traveling.

Science is a developer. The kick of a frog, under the slight current induced by a contact of two wet metals, with the same in circuit, has resulted in showing that the whole crust of the earth is oxides.

Civilization is a developer. Let us exert our influence in every relation in life to make progress by bringing the new and better out of the old. Never be in haste to destroy the old. The Indian corn brings up its successive leaves, ears, and the full corn in the ear, each coming out of the center of what had preceded it.

Effort and persistence are developers. Yale College started with one student. Lloyd's marine insurance started as a mere coffee-house talking room. The Mechanics' Society in this city, which runs the Apprentices' Library, free to everybody, and runs free draughting schools rivaling in quality and almost in size those founded by our ever-memorable Peter Cooper, held its early meetings in a small tavern. One of its earliest recorded votes was that each man should pay for his own drinks. The German iron-works of Fred. Krupp started in 1810 with ten workmen. Now one part alone of the manufactory employs 8,500 men and boys, and it employs 5,300 more.

It is hardly necessary to urge on photographers these qualities of effort and persistence. This was written by somebody a hundred years ago; let's develop the sentiment:

If I was a cobbler I'd make it my pride  
The best of all cobblers to be;  
If I was a tinker no tinker beside  
Should mend an old kettle like me.

I am a developer. I have developed surprise in you because I have not said one word about what you supposed I was going to.

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**THE PHOTOGRAPHIC SECTION OF THE AMERICAN INSTITUTE AN AID IN ADVANCING  
THE BEST INTERESTS OF BOTH THE AMATEUR AND  
PROFESSIONAL PHOTOGRAPHER.**

BY J. B. GARDNER.

"I DON'T SEE IT," says a professional. Well, perhaps you never will while you neglect to attend its meetings and skip its reports as published in the journals.

Many times and oft has the question been repeated. "Why is it that photographers will not meet on some common plane for their mutual interests, and labor unitedly to raise the profession in the eyes of the public to the position it should justly occupy?" Probably nothing has demoralized the profession more than the disposition of each to exterminate the other. Instead of uniting and



demanding from patrons a respectable support, they have sought to obtain this by continually reducing the price of their work, and thus call attention to *their* individual galleries. In this way they have been unwittingly undermining each other by attracting public attention simply on the score of cheapness. But this novelty of cheapness soon subsides, and by the time the most resolute is forced to sink himself to the level of the rest, the public are in no disposition to patronize the art to any greater extent than though prices had never declined. In fact the art is now less attractive, in some respects, than ever before, and hence the present grade of prices can only yield, in many cases, a precarious support. While by the stimulus of cheapness photographers could crowd their places with customers, a living was possible; but not always a good one even then for the employee. But as this *furore* subsided, greater reduction in prices has been resorted to, until all encouragement in practicing the art, as a means of money making, has well nigh died out. Thus the social status of the photographer is measured by society to a greater or less extent; and hence he is often obliged to retire from its ranks, or seek companionship with those beneath the proper level of his art. What the outcome of all this will be is hard to tell. One thing is certain, no individual effort can better to any great extent the condition of the fraternity. It is only by united action that the profession can be raised above its present level. And here comes in the first use of the Photographic Section—a society that dates back to the infancy of the art; a membership that can boast of names high up in the realms of philosophy and science; a library at command unequaled by any photographic society in the world; a meeting-room that will comfortably seat every professional photographer in the City of New York. And all this for the yearly sum of five dollars from each of its members.

This membership gives admittance to the Annual Fair of the Institute, and free access to its library, which comprises not less than 13,000 volumes on philosophical, historical, scientific and art subjects.

The Photographic Section of this Institute has been for years, and is now, a means for introducing to public notice all new and useful photographic apparatus, and is the depository of every valuable formula in the progress of the art. It has contributed largely to the literature of photography and to the culture and sociability of its several members. It has induced them to help and stand by each other; tended to subdue their selfishness and egotism; and disposed them to give the right hand of fellowship to all who would avail themselves of its privileges. It is true, objections have been urged against the Section, on the score that it encouraged amateurs to take from the professional, without remuneration, both the secrets of his art and his means of living, and therefore ought not to be encouraged. That amateurs have taken the greatest interest in the Section is not to be denied; that they have held the chief offices is also true; but that they have taken from the professional either his secrets or means of living, without remuneration, would no doubt be difficult to prove. If what they have done could be clearly brought to view, it would no doubt be found that they have been the professional's greatest benefactor, for they have discovered and worked out for him his most useful chemical formulas; designed the most ingenious implements of his trade; written his best text-books; and stimulated the manufacturer to increase, improve, embellish and cheapen his photographic wares. The amateur, often with his superior surroundings and associations, his wealth, or his refinement and culture, has done much to dignify and popularize the art, and

make it not only a source of pleasure to himself, but a means of profit to the professional. What he learns he is free to impart to others, and so by this interchange of experience the most desirable results are secured to all. For these reasons the Photographic Section has always courted the favor of amateurs, and looked to them for no small share of its support.

By many, photography has been regarded merely as a mechanical trade, that all who learn it, therefore, should be equally remunerated, the same as the carpenter, the shoemaker, and the blacksmith. But the manifold and widely different results achieved by those engaged in the art are strong evidence against any such theory. To grade prices, therefore, the same as in the mechanical arts, must only tend to convert art galleries into factories and thus ignore the different values of individual labor. If the best works of photography have proven anything, they have demonstrated individual aptitudes. So marked are these differences often, that each may be recognized by his work.

If this is true, should not photographers follow the example of artists in regard to the value of their work, and not be slavishly controlled by any uniform scale of prices? Would not this naturally change the order of competition? Would not quality and artistic skill be aimed at, rather than facilities to turn out the largest number of pictures at the smallest possible expense? Would it not encourage a better class of workmen, and unite capital with skill? In this struggle to be the cheapest, there is no incentive for either talent or capital; and, so far as this is true, the art must continue to decline in public estimation. Good work, rather than cheap, should be the motto of every photographer who would be liberally rewarded for his labor; for "whatsoever a man seweth, that also shall he reap."

It is often contended, however, that photography is *not* art; and, therefore, prices *cannot* be regulated by individual reputation and skill. If photography is not art, it is certainly very artish! It is full of tricks, and requires as much sleight of hand as the art of conjuring. It demands skill beyond the mechanic's, and a dexterity of hand guided rather by taste and judgment than by plummet and rule. It is the marriage of science to art—the union of manual and mental excellency. It is a profession in which the scientist, the artizan, and the artist may unite and give to the world the product of a labor not attainable by any other means. It is a novelty that has come to stay, and will continue to give new surprises not only to the public at large, but to those within the circle of its craft. And though its uses in the past have multiplied beyond all prophecy, it will continue to grow more abundant in its labors in the fields of science, commerce, literature and art. The skillful photographer may have no fears, therefore, that his art will die out, for it is constantly dyeing in and becoming more a necessity in the onward march of civilization.

It will, however, be constantly taking on new forms and adapting itself to new uses. He, therefore, who is not quick to follow its lead—who persists in clinging to its obsolete forms, and says the old is better than the new—will be about as likely to succeed as though he should attempt to compete with the present modes of travel by again introducing the stage-coach of the sixteenth century. To prevent the photographer from falling into this dilemma is also one of the uses of the Photographic Section, for it will not allow him to remain in his old ruts ignorant of what is being done about him, while at the same time it aids him in adapting himself to the constantly changing forms through which the art

must pass in reaching its highest capabilities. Many photographers, however, excuse themselves by saying that they can learn nothing practical in such an association. Then surely the honor and advantage of instructing becomes their privilege. And he learns most and best who teaches what he knows. Hence the more the photographer may be advanced in his art, the better will it be for himself and those he may have the skill to instruct; for the most successful life is the one that contributes most to the advancement of others.

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### ART CENSORSHIP.

BY L. H. SCHUMAN, *of Wisconsin.*

[Presented at the St. Louis Convention of the Photographers' Association of America.]

EVERY artist worthy of the name has more than a pecuniary interest in his art. He is a devotee. He loves his art for its own sake. He desires to see it conserved and perfected, not so much because that will put money in his purse, as that it will make his calling a more noble one; he is himself exalted when his calling is; whatever degrades his art, in some measure degrades him. The bungler and the charlatan rob him in a double sense.

But one of the inevitable incidents of the development of art is, that opportunity is given to the bungler and the "Cheap John."

When real art has created a demand, and while the popular taste is as yet imperfectly educated, bogus art steps forward with inferior imitations to accomplish the result to degrade the standard of taste, to cheapen the products of art, and to tempt the true artist to become careless of the quality of his work.

No noble growth ever appears but presently its parasite appears also. And so it happens that a growing art, like a growing plant, must contend with the gnawing tooth of the art parasite, whose work is to enfeeble and degrade.

It will be said that in time a true taste will prevail over a false one, and real merit win its reward. But can nothing be done to aid this process? I believe it can be materially hastened and, at the same time, much annoyance and trouble prevented, by the establishment of an art censorship as a civil office.

We would have such a censor or critic in each town and city, with a State critic and national critic, to whom should be submitted questions respecting the quality and commercial value of art products, the State and National censors being respectively courts of higher appeal.

The functions of this office would be to set an art or commercial valuation on all pictures or works of art submitted for criticism; to settle questions in dispute between artists and their customers; and, by any fitting and suitable means, to minister to the cultivation of a correct taste and to foster a popular appreciation of meritorious artistic work.

To this end, it would be the duty of the officer holding this position to mark all photographic work brought to him according to its merit, from a minimum to a maximum price, say from \$1 to \$10 per dozen for cabinets.

The law should provide that the price fixed by the censor could be recovered, and that by an order from him, thus settling all dispute or further litigation. But if the judge stamps pictures with his official stamp as being below the minimum commercial value, they can be returned to the photographer and the money refunded. If there be dissatisfaction with the decision of the local judge,



appeal can be taken to the judge for the State, and from his decision to the National judge or censor.

In all cases the parties submitting pictures for criticism should be required to pay the fees fixed by law, which would constitute the pay of the officers.

From the operations of such a law as is suggested, we may most confidently expect relief and advantage in the following directions:

*First.*—An easy and pleasant settlement of all differences that, under the present order of things, too often turn to the disadvantage of the artist. It sometimes happens that the photographer and his patrons differ as to the quality of a picture, and, unfortunately for all concerned, there is no established rule of amicably adjusting their differences. If a difference arises as to quantity it is easily settled by reference to the standards of weight and measure. But there is no standard for a picture or work of art. And while, in the nature of the case, there can be no absolute standard, still, by designating some competent persons to speak with authority, many of the advantages of an absolute standard can be secured. A lady may order a dozen cards or an expensive ink, oil, or crayon picture. While it is being made she has concluded not to get a picture at all. All she has to do when it is done is to call and, with a haughty toss of the head, exclaim: "I don't like it!" The work may be superb; her friends call, and, admiring the likeness, pronounce it good; but, alas, she, knowing too well the way out of paying for it, persists in saying she does not like it, and the artist is defrauded and helpless. Now this is a case for the censor; let him decide whether or not the picture is what it should be, and what price shall be paid for it.

*Second.*—The censor is needed to stand between the people and the imposition some would practice on them. Incompetent and irresponsible men, gifted with gab and gilded with brass, travel the country, soliciting orders for pictures, and palming off inferior work upon those unskilled to detect the fraud that they feel has been practiced upon them. There should be some authority competent to pronounce a decision in such cases that would protect the people and discourage this class of unscrupulous men from working detriment to art, and to the feelings and pockets of those who patronize them.

*Third.*—Such a court of appeal would check unreasonable fault-finding sometimes indulged in by the people. For if a man takes pictures to the art judge for which he has only paid \$4, and finds the judge thinks them worth \$6, and orders him to pay the photographer two more dollars, said fault-finder will be more cautious next time.

*Fourth.*—Such a censorship, competently and impartially administered, would render prices more stable, by giving proper rank and superior money value to the best work. And would thus also encourage the ambitious to strive to attain to higher excellence.

As it now is, the dead-level of prices, based of course on the misleading assumption of a common art value in the work, is only varied by ruinous cutting of prices, by which the best artists suffer most, and the Goths and Vandals of the business least. If any photographer is inclined to charge more than he should for his work, a few adverse decisions of the critic would induce him to make better pictures, or charge less for them, and if two or three lots a day were returned to him, the official stamp showing they had no commercial value, he would have to shut up shop, and step gently down and out. Under this system

of art-criticism there will be no room for Cheap Johns; in less than five years they would be a thing of the past.

*Fifth.*—But, better than anything else; this new office might be made the nucleus of a school of art to the people.

Some one should be selected for the position who has a natural good taste, and is possessed of a genuine and hearty interest in the growth of the art.

In the office, fitted for the purpose, every artist in the country should be permitted to compete for the privilege of hanging his best work. That privilege should be a coveted and valued honor. To this gallery the people should have access, and from time to time there might be lectures on topics connected with art and photography, illustrations of new discoveries, and various popular treatments of art subjects that would heighten the appreciation of the people for the best results in the art of picture-making.

Whatever develops and refines the taste of the masses will be beneficial in every way to the real artist, and in every respect will directly tend to “Ring out the false, ring in the true.”

To bring about the happy results pointed out in this paper, let us as a body request our several legislatures to create the office of art critic or censor, and pass such laws as would be necessary for the accomplishment of the objects sought.

Now, fellow craftsmen, my scheme and suggestions are before you, what will you do with them? Our glorious calling is falling into disgrace; her beautiful garments are trailing in the dust; unprincipled men are robbing her of her beauty and her worth. Who will come to her rescue?

Something grand and noble must be done at this particular crisis. Unless something is done we can look forward to no date when prices will be better and our profession command the dignity and respect it deserves.

This plan of censorship can be easily brought about, for it is not class legislation, but for the people as well.

It is the greatest good to the greatest number, and that is American, and every time bound to command the attention of our law-makers. Hoping you will take immediate action in this direction, and have a live, wise committee appointed that will take decisive steps, I am pleased to leave it in your hands.

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### SUCCESS.

BY H. P. ROBINSON.

[Read at the English Photographic Convention at Derby.]

I THINK it just possible that at a convention like the one we are now holding, in which business is so delightfully mixed up with other things, all the papers read need not be of that strictly scientific or artistic character which is demanded in communications to a society. Therefore I will avoid technicalities and turn my paper into a little essay or homily, and take “Success” as my text.

In photography (apart from invention) there are two kinds of success—business success, and the success which results in the production of the most perfect pictures. These two successes seldom go together, and are, indeed, often very wide apart. From a business point of view I am afraid that photography, as a profession, has, of late years, greatly changed for the worse, and I think many of my hearers will agree with me. It is not now the best photographer, but the

most shameless tout that makes the most money. There was a time when the photographer who could do the best work, and did it himself, just as a painter paints his own pictures, secured the best patronage; then followed a period when the business photographer, knowing little of the art himself, employed skillful assistants and devoted all his energies to "fighting the battle of the business in the shop." That is, he attended in his reception room and beguiled his customers into ordering what they did not want. From that time all hope of our art being admitted as one of the professions began to dwindle, and it became an ordinary shopkeeping business—and worse. The enterprising photographer is now not content to wait for sitters or rely on the ordinary methods of advertising, but resorts to the meanest tricks to obtain custom. Solicitations for sittings is general—the tout goes after the servant that he may get at the master, and this occurs with all stations of life in which there is a possible sitter, from the monarch to the tradesman. I think it will more clearly let you know what it has come to if I read you a short but ingenuous letter I have lately received. I preserve the original spelling.

"DEAR SIR,—A Short time back I bought your Photographic Handy Book, No. 6, with the expectation of finding a system of wording or I might say a kind of letter writer when or for the perpose of Soliciting Patranage by writing. You know it is imposable for a professional man to solicet and be at home to. Therefore it requires particular solicetation or rather wording to be soficient inducement to draw them into the Studio. If you can assist me in anyway I shall be greatly obliged for your kindness."

Now I am always troubled if I cannot comply with any request made to me by a brother photographer, but what was I to do in this case? If there is one thing that has degraded our art more than another, it is this touting. I had reluctantly to tell my correspondent, in Ruskin's phrase, that I was quite precisely the last person in the world to write a "Tout's Polite Letter Writer."

Let us get away from this degrading view of success, and try to find the way to that higher and nobler success which should be our aim in picture making. The way to success may be described shortly in the three words, "Never be satisfied." Take an honest pleasure in your work, admire it if you like, but never make up your mind that better cannot be done. I know very well that a year or two ago I wrote a paper in which I tried to persuade the photographer to be satisfied when his picture was "good enough," but this was directed against those who strove after the impossible and who only succeeded in depriving their pictures of all life and spirit. "Good enough" implies something better than the merely good. It is a wise saying that the good is often the enemy of the best. It is not enough to be good, it is the "little bit better" that makes the work of genius.

There is nothing more disappointing than the "might have been." The portrait would been better if the expression was not so gloomy; the landscape might have been more successful if that figure had been in the right place, or was more appropriately dressed; the architectural subject would have been worthy of a medal if the lines had been upright. How often do we hear remarks such as these.

It has often been said, perhaps ironically, that nothing succeeds like success. But how are we to estimate what success is? We must know what it is before we strive for it. An approximate definition may be that it is doing everything as well



as it can be done. This is only partially correct. It would be nearer right to say that it is doing everything *worth doing* correctly that is entirely successful.

Finally, Is success worth achieving? Is success to be its own exceeding great and only reward? or are those who win success to reap only the revilings of those to whom they have hitherto looked for encouragement and support—those who once were, and still ought to be, leaders of photographic opinion. I think it will be admitted by all impartial minds, that those photographers who have competed for and won medals at exhibitions, have allowed singularly little of the trade element to influence them in competing. I take credit to myself (and I freely claim the same for others) that I have steadily kept in mind in everything I have exhibited, that my efforts, however weak, should be to add to the honor and glory of the art, and I admit that I have had a very sufficient reward in the appreciation of my brother photographers. I may also mention that I have been asked by many medal holders—including amateurs who have no commercial interests—both at home and abroad, to speak on this subject, and I do not desire now to speak so much for myself as for those very numerous winners of medals who appear to have incurred the displeasure of one whose journal has hitherto been the support of all that was honorable in our art. Only the other day the Editor of the *Photographic News*, in alluding in an editorial note to the Glasgow Exhibition, at which no medals were offered, said, “So we may expect to see nothing of the works of those *enterprising traders* who look upon medals as a means of making the untrained public regard them as ‘the salt of the earth.’” As it turned out, these “enterprising traders” exhibited very largely.

And this is success, to have the meanest motives imputed to the most successful! There are a large number of medal winners in England and Scotland, and this snub, to call it nothing worse, applies to all. I am afraid that many photographers whose pride and happiness it has been to support the *Photographic News*, are not unlike that often quoted “Struck Eagle” of Byron’s, who

“Viewed his own feather on the fatal dart,  
And winged the shaft that quivered in his heart;  
Keen were his pangs, but keener far to feel,  
He nursed the pinion which impelled the steel.”

It is a Socialist doctrine that all men ought to be equal in all things, in which case one would no more deserve a medal than another, a comfortable creed oftener held by those who “have not” than those who “have;” but I think we may leave Socialism to the congenial street mud in which it usually wallows, and not introduce it into photography. There can be no doubt that medals have done great good and educed better work than would have been done without them, and thereby materially aided in the advancement of the art. I do not expect to be a competitor much longer, therefore the awarding of medals in the future has little to do with me personally, but I know that the honorable incentive of competing for medals has brought out of me the best work of which I was capable, and which, otherwise, would not have been done. The endeavor to win medals, or, in other words, the struggle to produce the best that their materials would allow, that they may obtain the recognition of their fellows, has been the means of many photographers achieving success.

## ON FOCUSING SAILING SHIPS AND OTHER MOVING OBJECTS.

BY J. TRAILL TAYLOR.

[Read at the English Photographic Convention at Derby.]

THE importance of being able to focus a moving object under circumstances that admit of the exposure of the plate simultaneously with such focusing has long been recognized, and several devices to admit of its being done have been introduced. I do not here refer to the placing of the object in its best position on the sensitive plate, for this is easily effected by a supplementary finder or by sights placed upon the camera itself. One of the simplest and most elegant of the latter is the little folding square frame with cross wires erected on the front of the camera, with a folding eye-hole piece for observation fixed on the posterior end. This is a French invention, and will be found illustrated in Monckhoven's "Optics," published twenty years ago.

But what I specially allude to is a means of insuring a sharp focus of an object that is more or less constantly varying its distance from the camera, such as figures in a street or park, a restless wild animal in its yard in the Zoological Gardens, a ship or boat in rapid motion, or objects seen under like conditions of alteration of distance, and the effective photographing of which precludes the possibility of obtaining the focus on the ground-glass screen of the camera in the usual way. The condition for photographing objects of this class is that the plate shall be kept uncovered save by the exposing shutter, and that the focusing shall be effected through the agency of a separate lens of similar focus, or one which for the time being is relegated to this duty, a touch of the trigger effecting the exposure, when sharpness and correct position are obtained.

Sutton's reflecting camera, introduced in 1861, fulfilled this condition in an admirable manner. A mirror placed inside the camera at an angle of 45 degrees intercepted the rays from the lens, and served the twofold purpose of preventing them from falling upon the sensitive plate at the back and of projecting them upwards upon the focusing screen, which was fitted in the top of the camera, and upon which the operator watched the image, now in a non-reversed position. Touching a trigger at the fitting moment, the mirror, which was hinged upon a pivoted axis, flew upwards, covering the ground glass, and permitting the light to fall upon the sensitive plate, the lens being capped by an automatic movement or otherwise. Cameras constructed on this principle are being made in the United States as detective cameras. In this, only one lens was employed.

When photographing the animals in the London Zoological Gardens in 1873, Mr. Frederick York employed a supplementary camera having a lens identical with the working lens. This was erected on top of the working camera, the mechanical parts being such that the focusing of both was effected by one motion, so that what he saw focused on the ground-glass of the upper camera he knew to be in equally sharp focus on the sensitive plate in that below. I remarked to Mr. York, when I examined it with a view to writing the account of it which was published soon after, that it was a considerable expenditure of optical means to have such a costly lens as the focusing finder, and soon afterwards I simplified it in my own camera to the extent that the costly lens in Mr. York's case was superseded in mine by one of similar focus, costing less than two shillings. The ground glass of the finder—a circle of an inch and a half in diameter—was erected on the top of the camera on the plane of the sensitive plate, and was connected

with its lens at first by two tubes of brown card-board, and subsequently by a tube of black calico distended by four strips of elastic rubber attached at each end. This answered so well, that I can recommend it as something that may entirely supersede a large focusing screen, a great boon under many circumstances, especially when the camera is fitted with a roll holder for paper.

On one occasion in the summer of 1881, when dashing through Boston, Mass., Bay in the steam launch of Ernest Edwards, and rushing under full steam up to first one and then another and another ship or yacht which was coming in or going out under sail, although with the small camera I was then using—an 8 x 5 with a lens of eight-inch focus—I got them all quite sharp in virtue of an optical law to which I shall presently refer, yet I realized that with a large camera and a lens of a large aperture and long focus, absolute sharpness could only be obtained by a fluke, unless the distance of the ship from the camera were known with a fair degree of accuracy. I thus conceived the idea which I am now going to submit to you, and which, I venture to think, will not only meet with your approval, but your adoption. It costs but little; it is worth much. But previous to doing so, let me, as cognate to this subject, recognize what has lately been done by some others in this direction.

The Jumelle opera-glass camera is doubtless familiar to many of you, as it has been before the public for nearly twenty years. In it one barrel is the focusing and the other the working camera. The small size of the plates ( $1\frac{1}{8}$  inches square) limits its utility.

More ingenious is the system adopted by Marc Ferrez, and described by him at the January meeting of the Photographic Society of France. Premising that he employed a large camera, for plates eighteen inches square, for obtaining instantaneous views of shipping, and that after having got the image upon the ground glass perfectly focused, by the time he got in the dark slide and opened it to take his shot, the image of the object was no longer in the camera, or, if it was, it was imperfect and out of focus; he eventually mounted on it a small camera, the lens of which was connected with the larger one by a lever, which acted on the principle of the proportional compasses. Both lenses working thus in harmony, a great advantage is gained by the operator. I quote Professor Stebbing, who wrote at the time, "He can have his dark slide ready open and his instantaneous shutter set ready for a shot. He follows all the movements of the object he wishes to photograph with the greatest ease on the ground glass of the little camera, and when the object presents itself to the taste of the operator he has only to press the pneumatic ball and the sensitive plate receives the lighting-like impression."

I now submit my own camera and the system of focusing I have adopted. The camera, as you perceive, is an American one, to which I have adapted a lens of sixteen-inch focus. Being fond of carrying with me a pocket telescope, I selected one the object glass of which is of precisely the same focus as the camera lens; and when I wish to focus the camera on a moving object I take the little telescope (a cheap French one) from my pocket, draw out the slides, the second one of which moves very loosely, and by means of a pin projecting from the top of the lens board or front of the camera, I instantly attach the object-glass end of the telescope, doing the same with one of the sliding tubes to the ground-glass end of the camera. Careful adjustment is necessary when determining the position for the pin, and as both telescope and camera are now con-



trolled by the rack and pinion of the latter, it is only requisite that you look at the object to be photographed through the telescope, and render the image sharp by the rack and pinion, to insure the image formed by the camera lens being more perfectly focused on the sensitive plate than it could have been by focusing on the ground glass in the usual way. When done with, the telescope is lifted from its position on the camera and returned to the pocket.

Although no trouble will be experienced in obtaining French telescopes of every focus suited for this purpose at prices ranging from five shillings upwards, according to size, yet it may be well to observe that an accurate assimilation of its focus to that of the lens may be made by any one possessing mechanical knowledge. The object glasses of such telescopes are but rarely cemented, and by separating the components by a greater or less space its focus is lengthened. It is quite true that this will disturb its correction for the highest class of definition, but will not effect its working for the special purpose now being advocated. Such is the latitude permissible in this class of correction, that two common spectacle lenses, each approximately of twice the focus of the camera lens, may be made to serve as the objective of the finder, by noting, first, that their shortest focus is obtained by mounting them close together, whereas by separating them their focus is lengthened. With lenses of this class it is necessary to reduce their aperture by a diaphragm. Bear in mind that if the extemporized object glass of the finder be composed of a concave and a convex lens, the separation of the two lenses shortens the focus, whereas if both lenses are convex the focus is lengthened by such separation. It is quite possible to obtain, at a cost of less than sixpence, a round, unedged spectacle lens an inch and a half in diameter of any required focus; but for those who desire absolute accuracy I recommend the employment of two such lenses.

The rule by which any definite focus may be accurately obtained is this: Knowing the focus of each of the two lenses, add them together, and subtract the distance of their separation, then multiply the two foci together, and divide this last quantity by the first, which gives the precise focus of the two lenses when combined. As I have previously said, the focus is lengthened by increasing the separation, and by the above rule this can be done with unerring accuracy. A rude object glass for a finder of this class must have a diaphragm, but it answers its purpose admirably, notwithstanding the prismatic fringes.

Since writing the foregoing, I am informed that another system of focusing a moving object has been introduced by Mr. McKellen. This, it is stated, proves highly effective; but as the precise means employed have not yet been published, I am unable to do more at present than merely make mention of it.

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#### OUR ILLUSTRATION.

WITH this number of the BULLETIN we present our readers with an illustration from one of the negatives of Professor E. L. French, of Wells College, Aurora, N. Y. Professor French is the Secretary of the Postal Photographic Club, and we have often been delighted with charming exhibitions of his photographic skill in looking through the albums of the club that are circulated regularly among its members. We are much pleased to present our readers with an example. The negative of the picture, which we reproduce by the Indotint process, was taken on a Stanley dry plate with a Dallmeyer wide-angle lens, the back combination being removed.

# ANTHONY'S Photographic Bulletin.

EDITED BY

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Aided by ARTHUR H. ELLIOTT, Ph.D., F.C.S.,  
and a corps of practical assistants.

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## THE PHOTOGRAPHERS' ASSOCIATION OF AMERICA.

*Fourth Day—Continued.*

Dr. ELLIOTT—Would it not be better to classify according to the size, say, life-size or larger, for one set of medals, gold and silver, first and second; half size, gold and silver, first and second; and then smaller than that, gold and silver for portrait work and for other work.

Mr. CRAMER—That is another good idea, and will be considered. I claim if we adopt the plan of giving gold and silver medals for different branches of work without classifying the entries and no more, the small photographer will be debarred from getting a premium under all circumstances, because the man who has the best facilities will have a finer and a larger show than the other one will.

The President—You can get this by limiting the display to certain sizes, and parties would have to choose what variety of exhibit they would make, say 16 x 20 and up, and display nothing below that, or display below that and not above.

Mr. CRAMER—That does not cover the ground. Supposing we say that that should

be adopted. It does not give the small photographer a chance to come in with a dozen pictures. Large galleries, where they have abundance of work to select from, can make a magnificent show of cabinets, while the small photographer has no show.

Dr. ELLIOTT—I thought the plan was to divide the gold and silver medals, and have a party compete for either one or the other. A man could then enter for either the gold or silver medal, or he could enter for the gold one only.

Mr. CRAMER—If a party entered for a silver medal, he would then have no chance of getting a gold medal. My object is to devise a plan so that the small photographers shall have a chance. They have complained that they have no chance here. I think that this is the only plan by which it can be done. But if the association is opposed to it, I will say no more about it.

Mr. RYDER—I think that every man ought to have a chance. It is not the large or the small collection of pictures that brings the prize, it is the quality that tells. If a man brings half a dozen pictures here and they surpass others in excellence, that man is entitled to a prize over a man who might bring a cart-load. In other words, a man may bring a small collection, and make a good show, or he may bring a great deal more than is necessary. Half a dozen good pictures might show the quality of a man's work, and the number of pictures might be limited to that. The question whether the party competing was entitled to a prize, would depend upon the quality of his work, nothing else. Now I say every man, small as well as large, has a chance, and that chance is the proof of his own work. Now, would it be possible for a man to enter for a gold medal and for a silver medal also. I want to be fair to everybody. I think the question of whether it should be a gold or silver medal should be left in the hands of the judges. I think that a very great many men would dislike to say, I am going to enter for a silver medal, when they might be entitled to a gold medal. Men do not want to depreciate their own business, or to say that they are only competing for a second prize. Every man should aim high and jump high, and if you cannot go over the rainbow, jump under it.

Mr. CRAMER—Mr. Ryder, you will admit any awarding committee that may be appointed will be influenced by the magnificence of the show, by the taste shown in putting it

up, and by the grand variety and display in it, and I claim and say that the photographer of small means cannot compete with such a man. He may have the ability in himself, but not the facilities. And if you leave the gold and silver medals open to all, and award them to those who are best entitled to them, first the gold medal, and second best the silver medal, the small photographer will have no show at all. But if a man of small means is inclined to think that he cannot get a gold medal he can enter for a silver one. He has a chance to get one. They would be just as proud of a silver medal, and would enter just as readily for it as for a gold one, if they thought they had a chance. But the object of my remarks is only to bring out the expression of views from the members about points discussed at the meeting of our Executive Committee, and I think I have accomplished that.

Mr. BELLSMITH—I remember attending an exhibition a number of years ago in the city of Hamilton, where a number of prizes were awarded for photographic exhibits. The plan of awarding the prizes was as follows: For the best two dozen cabinets; best two dozen 8 x 10, portrait, landscape, or whatever class; for the best two dozen 11 x 14; for the best two dozen 18 x 22, and so on up to very large work. The display then was confined to a certain number of photographs a certain size.

Dr. ELLIOTT—That idea has been suggested, to limit the entry of pictures to a certain number and to a certain size. Then a man might enter, say, for a dozen portraits, and there would be only so many for competition.

Mr. COOPER—I would like to say further, Mr. President, these prizes, we understand, are to be given for excellence in photography, and therefore it does not include frames or anything of that kind, and I suggest this, that all competing pictures should be unframed. And, if it is so decided, let the pictures be limited to, say, two dozen and nothing less than one dozen. I think that is sufficient. Let every man who competes bring his pictures just in an unframed condition, and then they can be judged of as photographs. That would be proper, and his merit would be decided by the merit of his pictures and not otherwise.

Mr. CORMANY—I would move that that be the rule.

*The President*—The chair will not entertain any motion on this subject. This discussion was entered into simply as a guide for the work of the committee, nothing more.

The question being on the motion that the association appropriate \$1,000 to the medal fund, it was agreed to.

*The President*—I have a communication here from Dr. F. Mallman on "Orthochromatic Photography." It is in German, and Mr. Benecke has promised our German friends that he would translate our communications. It will be translated by him and sent to the different journals.

On motion of Dr. Elliott, a vote of thanks was tendered to Dr. Mallmann for his paper.

Mr. CRAMER—I want to say a few words more. I will not detain you very long. I wish furthermore to state that it has been the object of the Executive Committee, in combination with every one—there being so many prizes in medals—to try to get as much practical information as possible in relation to the exhibits, as to the lenses used, the developer, and all the practical points. Now I do not know whether you have all paid proper attention to the statements made by exhibitors on their entry cards, which are attached to each exhibit. For instance, the exhibit made by Bellingier gives all the details in reference to exposure, lens, and development of these pictures, which are stage scenes taken by the electric light. Every one must perceive the difficulty of taking them, and admit that the result is beautiful. I think the information given in regard to their development is invaluable. He states the plates were well washed in water, then in sulphite solution, afterwards adding pyro as required. I think the information may be of great value for short exposures.

Mr. GENTILÉ—I would make a motion that we pass a vote of thanks to the citizens of St. Louis for the manner in which they have entertained us during our stay, including the ladies and the press.

Mr. RYDER—I move a vote of thanks of this association be tendered to our esteemed and valued worker, Dr. Morgan, who has been with us so many years, for his efficient labors in our behalf in taking notes of our proceedings. His genial face is always welcome, and he has become quite an adjunct to this association.

Agreed to.

*The President—Ladies and Gentlemen:* Time will not stay. This convention is dissolving out. What we have said and done here will soon become fixed in the history of the past. We have come now to get a proper idea of the perspective, what can be done on the largest plate. That this convention will be a benefit to us all I think will hardly be ques-



tioned by any one here. May God bless you and vouchsafe to you a safe return to your homes.

Mr. COOPER—Could not some arrangements be made at the next convention by which it will be practicable to give some ideas of posing?

Mr. GENTILÉ—I would like to state that it was done in New York at a cost of between five and six hundred dollars to this association, proved a most dismal failure, and is likely to do so again.

Mr. CRAMER—It was the same in Cincinnati.

Mr. GENTILÉ—It is true, as Mr. Cramer says; it was the same thing in Cincinnati. It is impossible to get persons enough into a room to be of any value. It can only be done in a private gallery.

Mr. HICOCK—It might be done without any accessories on the stage, where the whole audience could see it.

The *President*—Were you at the Cincinnati Convention?

Mr. HICOCK—Yes, sir.

The *President*—The camera box was broken for which the association paid \$50, and we did not even get the pieces.

Mr. HICOCK—I did not think it was necessary to have a camera in use at all.

Mr. CRAMER—As I have stated, I have been absent so much from the meetings, that I am not exactly aware of what has been done with the essays which were presented as competing for prizes.

The *President*—The committee have a month in which to make their award. It is an important committee to appoint, and the question in my mind has been, who shall be placed on it? The papers should be handed to the journals in the meantime and published.

Mr. STUART—They might have sixty days.

Mr. CRAMER—I move that the essays be divided among the journals so that they will all be published within sixty days, and that will give the judges an opportunity to read them in print, and to make up their judgment from them.

The *President*—I think that sixty days will cover everything. Some of the journals will come out in a week, and they will have a great many of the contributions.

The *President*.—The motion is that the committee wait until the journals publish the papers.

Mr. STUART—I think the committee had better be appointed now.

The *President*—Do you make a motion that

the committee be appointed now? I think all the members understand the sense of the motion, that it is better for the committee to wait and read the communications in the journals. Now as to the committee. I was instructed by the Executive Committee and officers to select that committee, and, while we are in session here as an association, I would like to have instructions. I think that we might discuss that point. Mr. Cramer and myself had quite a spirited correspondence on that point. My idea was to appoint a man that was eminent as a photographer; I put it in this shape: I said I would appoint a man that is a good photographer, and a man who was a good chemist, and a man that was a literary genius, if we could find him. That is all I stated as to the qualifications, and Mr. Cramer and myself had quite a spirited conversation about the matter. What I meant by that was, the chemist should have a practical knowledge of photography and the chemistry of photography in its highest line, and the literary man would be able to judge of the literary character of the contribution, having a good practical knowledge of photography and its strong points. That is my idea, but I would like to have suggestions from the members present as to whom to appoint upon that committee.

Mr. STUART—I would suggest that we nominate some one.

The *President*—That is just what I am waiting for. The first man we want on the committee is a good live photographer, and a practical man should be the chairman of it.

Mr. STUART—I nominate Mr. Eastman.

Mr. CRAMER—I nominate Mr. Landy.

Mr. D. R. CLARKE—I nominate Mr. Gentilé.

Mr. Stuart was also nominated, but was ruled ineligible by reason of being a competitor.

Mr. CRAMER—I nominate Mr. Beach, he is a scientific man.

Mr. GENTILÉ—We should have one man who is a practical photographer.

The *President*—Mr. Landy would be a good man. I put Mr. Gentilé under the literary head. There is also Mr. Carbutt.

Mr. CLIFFORD—I nominate Mr. Joshua Smith.

Mr. CRAMER—I nominate Mr. Carbutt.

The *President*—He would be a most competent man.

On motion the nominations were closed.

The *President*—I will name the committee as follows: Messrs. Landy, Beach and Carbutt.

[Mr. Beach not being a member of the association, and therefore not legally qualified to serve on this committee, the name of Mr. D. R. Clark was substituted for his name.\*]

Mr. CRAMER.—Before we adjourn, I think it is no more than proper to thank the officers—those who are withdrawing from their office—for the faithful performance of their duties. I refer especially to our President, Mr. Potter, and our worthy Secretary, Mr. McMichael, who has worked so hard for the good of the association, and who has also helped to swell up the treasury.

Mr. GENTILE—Excuse me, but Mr. Cramer is out of order entirely; he is one of the Executive Committee, and has no right to move a vote of thanks to the officers.

Mr. CRAMER—I refer to the officers who are retiring from office.

The *President*—If there is a question to be decided by the chair, I shall decide the gentleman in order, and for this reason: he starts out by excluding himself from the motion.

Mr. RYDER—We must recognize Mr. Cramer as the President-elect, but he will not take his office as such President until the 1st of January.

Mr. CRAMER—I hope you will all understand that I do not want a vote of thanks passed to myself.

The *President*—You have heard the motion.

Mr. GENTILE—I would like to make an amendment, including Mr. Cramer.

Mr. CRAMER—You are out of order, and I cannot accept that amendment nor embody it in my motion.

The *President*—The amendment is not accepted.

Mr. RYDER—I think that we are all in order in one thing surely, and that is in heartily indorsing the work of the present out-going administration. All who are in favor of that will say aye.

Agreed to.

Mr. CRAMER—One more remark before we adjourn. I hope all the persons present will come to the hotel where our worthy President abides, to take the opportunity to take him by the hand, and give him a good hand-shake, at eight o'clock this evening. Tell all those whom you have a chance to see, to be there at the Lindell at that hour.

The *President*—My room is 17. I cannot get all who may come into my room, but they can all get into the hotel.

Mr. GENTILE—We have a letter sent, with a request to read it, from the Most Illustrious Master Photographic Manipulator of the S. O. S. P., a secret order, and also a communication which he wants to inflict upon the association.

The *President*—What shall be done with the communication?

Mr. CRAMER—I move that it be placed on file and be published.

Agreed to.

On motion the convention adjourned *sine die*.

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ST. LOUIS, MO., June 28, 1886.

IN EXECUTIVE SESSION.

It is moved and seconded that Mr. Joshua Smith be heartily thanked for the executive ability displayed in securing subscriptions, and the artistic taste shown in selecting the design for the association medals.

*Further*, He has our thanks for the disinterested spirit shown toward the association in spending money and time for the consummation of our purposes in offering the said medals.

W. H. POTTER, *President*,  
H. McMICHAEL, *Secretary*.

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### PHOTOGRAPHIC SECTION OF THE AMERICAN INSTITUTE.

REGULAR MEETING, SEPTEMBER 7, 1886.

The *Vice-President*, Mr. J. B. GARDNER, in the chair.

The *Secretary* announced the receipt of the regular numbers of the *Photographic Eye* and ANTHONY'S BULLETIN published since the last meeting. Also read a notice of an Electrical Section lately added to the Institute, which would hold regular meetings in the same room occupied by the Photographic Section on the second and fourth Wednesday evenings of each of the winter months. All were cordially invited to attend free of charge.

The Chairman of the Executive Committee announced that the subject of the evening was the "Uses of the Photographic Section." Also the responses to toasts intended for the last annual dinner, but for want of time could not be read on that occasion; or, rather, such portions of these responses as might be thought useful or entertaining to a larger audience than could be gathered about an annual dinner table. It was also announced that Dr. EDWARD L. WILSON would give an illustrated lecture at the regular meeting to be held October 5th.

Mr. THOMAS D. STETSON then gave the

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\*It was finally decided that Dr. John Nicol be placed on the committee instead of Mr. Clark, who declined to serve.

response to the toast, "Developers: May their Shadow Never be Less." [See page 553.] This was followed, by special request, by Mr. DANIEL R. GARDEN's paper read at the dinner. [See page 521.]

Mr. J. B. GARDNER then read his paper. [See page 554.]

At the close of the reading a number of suggestions were made by Prof. LAUDY, Mr. EHRLMAN, and others, as to the feasibility of having an informal or a social meeting of the Section once a month, but no definite conclusion was arrived at and the subject was laid on the table for future debate. A Visiting Committee was also proposed to devise ways and means for securing the attendance of a larger number of both amateur and professional photographers, and after considerable discussion it was finally thought best that each one interested in the prosperity of the Section should use his best endeavors to increase its membership and also submit to the Executive Committee such subjects for discussion or demonstration as might add to its usefulness or popularity.

The group pictures made on the last field day excursion by Messrs. Gray and Mason were then submitted to the criticism of the audience and pronounced unexceptionably good, all the copies of which were quickly disposed of, and orders for more were given to be printed and finished.

Dr. E. L. Wilson was again announced as the lecturer for the next meeting, and on motion the Section then adjourned to the first Tuesday in October.

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## THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.

EXPERIENCE MEETING, AUGUST 25, 1886.

The meeting was held at the society's quarters, 122 West Thirty-sixth street, and was called to order at 8.20. President BEACH in the chair.

Mr. BEACH—The next regular meeting will occur on September 14th. Mr. Fred. E. Ives, of Philadelphia, promises to be here, and he will exhibit his improved lantern.

There will be social meetings on Friday evenings, September 3d, 10th, 17th and 24th.

The next matter is the reading of a synopsis of the minutes of the last meeting. Substantially it was a lantern exhibition of slides contributed, I think, by the Philadelphia Club, and there were some rules of the exhibition committee, governing exhibitions, which were also read.

We are trying to make arrangements to

have a photographer present here every evening during the week, except Sundays, who will open the rooms, develop the plates, and give instructions to members who desire it. His advent here may be expected about the 1st of September. Notice will be given and put up on the bulletin when the arrangements are made. Until then, any member who desires to use the rooms to develop in in the daytime can get the key from the builder downstairs (Mr. Patterson), or if any of the members desire to own keys, they can purchase the same from me, price, twenty-five cents. Then they can obtain access at any time, Sundays included, if desired.

It has been suggested to me that this society supervise an exhibition of amateur work proposed to be displayed at the coming annual American Institute Exhibition. It was thought the managers would set apart a large room for it. I shall be pleased to have any suggestions from members later on.

The committees of the three societies of Boston, Philadelphia and New York, are in communication respecting an agreement upon a uniform set of rules to govern the proposed joint triennial general exhibitions, and it is expected a decision will soon be reached.

It was expected that the next exhibition would be held in Boston, but President Cabot informs me that it will be impossible to do so, owing to their reorganization. It is probable now that the next general exhibition will be held in this city early next winter. The Boston society has changed its name and is now called "The Boston Camera Club." They are to admit professionals as well as amateurs as active members.

Since the meeting of last June we have added to the library a book called "The Beginner's Guide to Photography," which was purchased, and another book entitled "Dry Plate Making for Amateurs," by George L. Sinclair, M. D., presented by the Scovill Manufacturing Company. There are also a few periodicals, including two copies of the *St. Louis Photographer* and eight copies of the *Philadelphia Photographer*, presented by myself.

We have received a circular from the Photographic Society of Great Britain, announcing an exhibition to be held next October, beginning on the 4th and lasting till November 13th. All amateurs are invited to send exhibits.

We have also received a circular of a book called "The Landscape Photographer's Systematic Exposure Book," for calculating proper



exposures, which is said to be very useful for amateurs, and the officers have sent for some of these books to be distributed among the members.

A pamphlet giving a complete history of the formation of the society from its organization, has been presented to the society by Mr. Joseph S. Rich, and they will be distributed among the members who may desire copies; or, if they will apply to the Secretary, or to me, we will be very glad to send them.

I have a very fine enlargement, which was donated by Mr. J. S. Williams. It was enlarged by O'Neil from a negative  $6\frac{1}{2} \times 8\frac{1}{2}$  made by Mr. Williams. The picture is of a lady standing in a field of daisies, some of which she holds in her hand. It is remarkably soft, clear and sharp.

A few days ago I had a call from M. P. Warner, of Holyoke, Mass., a matter-of-fact Yankee, who presented me with some specimens of phototypes made from a few of his negatives. He also exhibited to me an improved plate holder, which I hope to have here at our next meeting. His negatives appear to have been very clear, vigorous and brilliant, and at my request he gave me his formula. The sensitive plates employed were made in North Adams, Mass. He first makes a saturated solution of citric acid as follows:

Water.....2 ounces.

Citric acid.....1 ounce.

When dissolved this produces three ounces of solution.

#### No. 1.—PYRO SOLUTION.

Citric acid solution..... 1 dram.

Pyrogallie acid..... 1 ounce.

Water.....12 ounces.

#### No. 2.

Sulphite of soda (crystals). 4 ounces.

Carbonate of potash..... 4 “

Water .....20 “

Each solid ounce contains 437 grains.

The developer is made as follows:

No. 1.....1½ drams.

No. 2.....1 dram.

Water.....3½ ounces.

If the picture comes out too slow, increase the amount of No. 2 a little at a time. If the image appears to be very much under-exposed, he advises the addition of a dram of the following:

Yellow prussiate potash.. 2 ounces.

Water.....30 “

The lens he employed was Beck's rapid rectilinear. The results, as shown by these specimens, speak very well for his skill, the developer, and the apparatus.

Dr. Janeway expected to present to the society to-night a series of photographs by Col. Woodward, a late Surgeon-General of the United States Army. They will be here in a short time.

Mr. Richard H. Lawrence, Secretary of the Lantern Slide Committee, has presented the society with a substantial black walnut table-desk, and it has been set apart for the exclusive use of that committee.

Mr. T. H. Blair, of Boston, has also presented an improved Blair camera to the society. Mr. Blair has set an excellent example to other manufacturers. We are now ready to hear from them, and we hope they will respond liberally.

One of our members, Mr. Osgood Welsh, has kindly loaned the society, for its use, a large copying and enlarging camera, which you can see upstairs. This is for the free use of all the members of the society, and those who use it are cautioned to take good care of it. It will stretch out to a focus equal to nine feet.

I am very glad to say that our interested Treasurer, Mr. Henry V. Parsell, who has his whole heart in the good and welfare of the society, has headed a subscription list with one hundred dollars toward paying for contemplated improvements, and has paid the same into the treasury.

I have the plans here for the projected skylight, and shall be pleased to explain the same to interested members. As I remarked at a previous meeting, we shall still need to raise between five or six hundred dollars to complete all the contemplated improvements. We hope members will subscribe something toward this.

Now, I would request some member to make a motion that the Secretary be instructed to send these gentlemen a note of thanks for their several donations.

Mr. NEWTON—I make that motion.

Carried.

Mr. BEACH—I now desire to exhibit to you a new camera which has recently been put on the market. It occupies a space  $3\frac{1}{4} \times 4\frac{1}{4}$ , and is about half an inch thick. It is called the “Ready Fotografer.” The principle of it is based on the well-known fact that you can obtain pictures by means of a pin-hole. To take a picture you simply tear with your finger the edges of the wrapping-paper, and that allows the box to extend. The lens con-

sists of a piece of mica, I think, or isinglass, with a needle-hole punched through it. The plate is always in position, and is secured to the back of the camera, which is stiff cardboard, and sealed up in there so that it is always ready for use. No focusing is required. It is always in focus, so you see there are two very essential and important points in this camera.

*A Member*—Have you any specimen photographs taken with this instrument?

Mr. BEACH—Yes, sir.

This is the machine after it has been used. That is the way it looks [showing]. I will pass it around.

Then this is the machine as you purchase it ready for use. The idea is that for each picture you have to buy a new camera. It has an unusual wide angle. I have a proof here that I made from a negative which I exposed the other day one and one half minutes. This is the negative and this is the proof [showing]. When I operated it I put a chair out in the road, and then I placed the camera on the chair—or you can use a fence-post. In one view you see, the marine view—there were some ladies sitting down upon the grass—and I discovered that one good point in this camera was the fact that it don't resemble or look anything like a camera. It looks like nothing more than an ordinary box that you set up. No one knows that you are taking their picture, and these ladies were perfectly oblivious of the fact that this picture of them was being taken. It takes a minute and a half to take a picture, hence it is very seldom that you can get any one to keep quiet long enough, especially when they do not know that their picture is being taken. I happened to mention this subject to Dr. Elliott, and he stated that he had a specimen of an 8 x 10 photograph taken through a small needle-hole; he has kindly loaned me the picture to show here this evening. It was made by G. M. Green, a photographer at Johnstown, Pa., and he writes: "I took a piece of thin tintype, and made a fine hole with the point of a needle, and put this on the front of my camera in the place usually occupied by the lens. The exposure was eighty seconds." That would be nearly a minute and a half, so in case you ever lose your lens, it is only necessary to buy a small piece of tin and blacken it up, and put a needle-hole through it, and you can take a fair picture.

Mr. A. D. Fisk will now kindly show a camera which has recently been invented by Mr. S. C. Nash, which is intended more for beginners and those who cannot afford to

pay very high for a photographic apparatus. It is entitled "The Boy's Camera," and he will now exhibit it and show you its advantages.

Mr. FISK—I suppose that Mr. Nash's idea in the construction of this camera was to do away entirely with the operation of opening a camera for detective work. If I remember rightly, I have not seen any detective camera, except this one, in which it is not necessary to open the camera and insert the plate or plate holder in some manner or form during the process of making detective pictures. This camera is constructed upon the principle of the "Acme Camera," of which Mr. Nash also is the inventor, and has been made as cheap and effective as possible. He originated the price at \$18, but he says he found he was going to the poor-house too rapidly, and he had to raise the price to \$21. His idea was to get a camera that would come within the range of a boy's pocket. The shutter is a rotating one, and is wound up by the insertion of a key in the front board. It will wind up until it stops—about 22 or 23 revolutions. The camera is opened by pulling back the lid, and then raising it up and working it forward. The plate holders or trays are upon a band. They are revolved by a large rubber wheel. The outer edge is toothed so as to make it easy to operate the plates. At the side here [indicating] is a little catch. As the plate is brought up into position it stops at this catch. After you have filled the plate holders, throw all the plates back to the rear. Bring the first plate up until it stops; push upon this spring like that [indicating], and release it, and that makes an exposure. Put your finger on this catch [indicating], press it in, start the next plate up by the wheel, and then release the catch and turn up the plate till it stops against the side catch. It then comes right to the line of focus. Touch the spring again, and so on for twelve plates. He has a finder here, and has placed over the front of the finder and the lens tube a little piece or disk of tintype metal, so that in looking in the finder, if there is no picture seen there, you can at once understand that you cannot make any picture. By moving this disk that way [indicating] it opens both the finder and the lens. There is also a large rotating diaphragm plate, and that is moved by the rear end of the key. Insert key here, and turn the diaphragm around until the size of stop wanted is reached. The camera is filled in the dark room, and this lid is put on, and then the whole box is covered over with brown paper. That was the intention, to have it covered

entirely with paper, and also carry it in a shawl strap.

Mr. BEACH—There is no arrangement for time exposure, is there?

Mr. FISK—No, sir.

On the bottom is a brass plate, which moves to get the focus, and the method of getting the focus is a little peculiar, entirely different from all other cameras. You insert an unexposed gelatine plate and bring it up to the line of focus; now work or release the shutter until run down, then it will remain open. Take a focusing cloth, place it over your head and the camera, and then look back against the plate, and move forward or backward. The whole frame and the picture will appear much plainer than if a ground glass was used. This causes the whole frame to move all the plates and secure the focus in that way for any distance you choose; then mark it on the bottom, just as you would for any detective work. Mr. Nash has discovered that one focus on these lenses (something he has gotten up himself) which is simply a single achromatic lens, will give a clear picture within twelve feet, and just as far as the eye can see. They are remarkable in their depth and also in the flatness of the field. I have here some pictures and some of the negatives that were made by this camera. [The pictures and negatives were distributed and shown to the members.] I might add that the camera is capable of carrying twelve plates.

Mr. BEACH—After those twelve plates are exposed, what is the operation then, supposing you are out in the field, and you want to take 25 or 30 pictures in a day, as you often do with a detective camera?

Mr. FISK—You have to go to the dark room. I think the only way to do with nearly all cameras is to go to the dark room, unless you carry a large number of holders.

I might mention that previous to my going north, I constructed a camera based upon the English idea of the well system, and it is so arranged that you can make pictures from early morning until night. Anywhere from one to five hundred exposures can be made without going into any dark room or inserting any plate holders or anything else.

Mr. BEACH—Mr. Blair, who is here this evening, has proposed an idea which appears to be valuable as tending to promote the art of photography. He proposes to present a "Prize Silver Cup," costing a large sum of money, for competition by different clubs in different years, to be held for the best amateur work. The principal idea is to encourage high attainments in the art. The pictures for which the

cup is to be awarded as a prize must be wholly made by an amateur, from the negative to the finish. He proposes that the representative clubs in the country, when they hold annual exhibitions, award diplomas for the best work in certain specified classes, as determined by the local judges. Then afterwards the prize pictures will be collected and examined by a special board of judges, not members of any society, who must pick out, in their judgment, the most meritorious, artistic, original and best executed picture. The club having the honor of contributing this picture will have the prize cup, and hold it for one year, until it is awarded to another club at a subsequent exhibition. I desire to ascertain how this proposition strikes the members of the society, and perhaps Mr. Blair will give us a little further information about it. I believe he has brought with him a design for a cup. Mr. Blair, would you enlighten us further in regard to this?

Mr. BLAIR—I think you have said all I possibly could have said, and with better grace I have a drawing which was submitted to me by Tiffany & Co., which, if the members would care to see, I would be happy to show. The details of the classes and other such arrangements I have not thought of yet, and I should like to leave it to the members of the club, or some other club, or some body of gentlemen who are more competent than I am. I should like to have the competition for it made as comprehensive as possible, and I think your President has stated all my intentions in the matter. The project, I don't think, would entail a great deal of extra work for the clubs. They usually hold their annual exhibitions any way, and it could be arranged to hold this exhibition at the same time. I think the cup, if one is gotten up, should be a very nice one—to compare favorably with the interest that is now taken in photography—and it should be held by the club that wins it for a year; and my intention was if the same club should exhibit work that would win the prize again, it should hold it for another year, or for any number of years so long as the standard of its work kept up to the winning point. I have the drawing here, Mr. President.

Mr. BEACH—I should be pleased to see it.

[The President then held up the large drawing for the members' inspection. It represented a cup in the shape of an urn, with tasteful handles and delicate etchings on the surface. A cherub holding a camera represented the emblem of photography. The design as a whole was quite attractive.]

Mr. BEACH—I desire to call your attention



to the new dark-room lights upstairs, and I would state that they have been designed with a view of illuminating the plate without detriment to the eye, and they give a large quantity of light, which is perfectly non-actinic. We have also new lockers which are at the disposal of the members who desire them, at a rental of \$3 per year.

The improved lighting arrangements referred to consist of three Russian sheet-iron boxes, located directly over the sinks, about a foot square, having a smoke-pipe extending from the top to a chimney. The bottom is left open and is closed by two sheets of rough cathedral glass, one of orange and the other green, which are held in metal grooves. They may be easily removed by sliding in or out. About two inches above the glass bottom are arranged four gas jets. On the front side of the box, facing the operator, is a small metal slide which uncovers a non-actinic glass window about four by five inches. A small pivoted slide on the right-hand side permits easy access for lighting the gas. The whole arrangement permits the light to come downward direct upon the developing tray in one large diffused mass, illuminating the plate without shadow, while no light passes direct into the operator's eyes. The light is directed just where it is most needed, and as the heat passes directly to the chimney, excellent ventilation is kept up in the dark room. To examine a plate by transmitted light it is only necessary to draw the small metal slide in front to one side, and look through the plate.

We now come to the subject announced for this evening, viz., the relation of any amusing experience which any member has had during the past season in making photographic trips.

For myself, I undertook to take a photograph of myself while in bathing in the surf. I found that it was very difficult to get anybody to operate the camera, as the tripod legs were likely to be dashed against by the waves, and so I concluded that the best plan was for me to try to take the picture myself. I had what is called a Prosch, "Eclipse Shutter," and I arranged a fine black thread from the ordinary cord which is attached to the shutter, and held it in the air so that it would not get wet by the waves, and when I was off about the proper distance I gave a pull, and that set it off. In one case the wind blew in such a way as to bring the cord in between the face of the shutter, or between the back of the shutter and the face which it slides against, resulting in catching and holding the shutter when

released, and of course spoiling the exposure. I found one trouble was that the little pin which is attached to the "Eclipse Shutter" string made so much weight that it tended to bring the cord right down into this particular spot. So by using a fine black thread, and especially having it on a little spool which you can gradually unwind from your hand, it is no trouble at all to take a picture in that way, and under those circumstances.

I also found a new way to blacken the back side of a drop shutter was to take the lead of a lead pencil and rub it all over the back; that not only blackened it, but it also acted as a lubricant, tending to make it act more freely. I had a plate which I exposed some time ago, among a series of negatives which I recently developed; all turned out nicely but this one, which, as a matter of course, was one that I prized a great deal. I found that some one had unfortunately drawn the slide over three-fourths of it after I had exposed it, which of course fogged it; and this leads me to suggest that it is never wise to leave your plate holders in any place where they can be got at by any party except yourself. It is always safer to keep them under lock and key. That is my experience. I have not had anything very extraordinary this summer in the way of odd experiences, and I should like to hear what some other members have to say.

Mr. FISK—*Mr. President*: I had the pleasure of taking a trip into Montreal this summer, and before going in I stopped at Rouse's Point. I had a friend in the Custom House Department there, who kindly arranged with the Custom House officer to admit my camera without opening it, and he also stated that he would arrange it so that it could come out all right. I took with me twenty-four plates, made twenty-four exposures at Montreal, and came on home rejoicing until the Custom House officer came to me as he passed through the train. It happened that it was a new officer, recently appointed, and he had not been seen by my friend. My parcel was all done up in a piece of paper. He wanted to know what was in it and I told him. "Well," he said, "I shall have to look inside the parcel." I told him that it would be impossible to let him do that, as the result would be the spoiling of a whole day's work. He said he could not help that; it was his duty to look into everything. I opened the camera and let him look on the inside of it, and he saw a pretty good thickness, about two inches, all covered up. He asked, "What is down below there?" I told him they were the plates. He said,

"Open them up." I said, "No, sir; I can't open that box." He said, "You must, or I shall have it taken away from you; how do I know what is in there; you are a perfect stranger to me; I don't know you, and why should I take your word." I said, "The camera is marked with the Inspector of the Custom House's mark as it went into Montreal, and it is coming out exactly as it went in with the exception that the exposures have been made." "Let me see one of the pictures," he said. I said I could not do that. I saw that he was getting on a high horse, because he was anxious to get through the balance of the train. I asked him if there was any way in which he could delay the examination of this box until later on, when he came back. He said, "I don't miss anything as I go by it." The idea then struck me if I could make him wait until I got past the lines, perhaps I could get somewhat the advantage of him, so I said, "I am going to Rouse's Point (which is only a few miles this side of the lines), and I am going to stop there," and I asked, "Can't you wait till you get there before you examine the box?" He then asked, "Are you going any further than the Point?" I said, "No." I told him I had friends there who would vouch that the camera was all right. He said, "All right, I will wait until we get to the Point, but understand I am going to open that box when we get there." I said, "All right." He went through, and among his customers were two French ladies, and they had packages done up as they came from the stores. He began to question them as to what they had in the papers, and they began to guy him, and finally he told them he would open those packages also at the Point. We were coming very near to the Point at this time, and I did not know what to do. I was not positive that any of my friends were there that I knew in regard to the Custom House, so I said to myself, I will take that package up and get into the stage just as quick as I can, and if he catches me, all right, and if not, all right. I stepped out of the car, and he cried out, "Helloa, where are you going?" I told him I was going to the hotel. He said, "I will be at the hotel to examine that box." I said, "All right, I will see you when you get there," and I jumped into the 'bus and came on home, but did not see him again, and thus saved my day's work.

MR. BEACH—I have a suggestion to make, Mr. Fisk, in that respect. I would suggest that the members take along with them, when they go to Montreal, one or two sensitive plates,  $3\frac{1}{4} \times 4\frac{1}{4}$ , and when they are requested to show

what is in their package, simply show them the plates and say that the others are merely plates like those.

MR. FISK—Yes, that is a very good suggestion. But some of the officers, when they are first put on, want to examine everything. I understand from some of the old officers, if they see you are respectable they will take your word and pass all such baggage.

MR. SIMPSON—Mr. Fisk having related his experience with a detective camera, I would like to relate a portion of mine. The other day I went down to Coney Island, where I made a number of exposures. Leaving Brighton, I took the railroad to Manhattan Beach. The moment I left the railroad station at that place a man stepped up to me quickly, saying: "That is a detective camera you are carrying; you can't take any pictures here." I replied, "Very well," and went on, but was stopped, and the question asked: "Where are you going?" Answering that I was going to take the railroad to New York, I passed on, thinking no more of the incident. When I reached the music stand, the same man again passed in front of me, and looked at the camera in a manner as if he thought the thing might explode at any moment.

I walked up to the balcony of the hotel and seated myself at one of the tables for the purpose of taking lunch, placing the camera on a chair.

Suddenly the same fellow appeared again and commenced to stare at me and the camera; I turned toward him, and remarked with a smile, "I see you are still following me up, I guess you will know me when you see me again." He instantly retorted, "You are nothing but a — loafer, and for two cents I would jerk you away from that table." Upon inquiry, I ascertained that the man was a detective employed by the Manhattan Beach Company. Feeling aggrieved at the fellow's treatment, and particularly at the language used, I complained at the office of the hotel. The clerk simply stated, "You have no business to carry those things around with you here," and referred me to the captain of the police, who, after I had explained the case to him, magnanimously granted me permission to remain upon the grounds; "but," added he, "I shall put you under police surveillance during your stay here, and lock you up if you try to take any pictures."

I remained on the grounds for some time afterwards, moving about with my camera from place to place under the close watch of three detectives, and was greatly amused at



their efforts in discovering whether I took a picture or not, and they never left me until they saw me safely on the train.

I need hardly add that I acted in a gentlemanly manner throughout, and that there was no occasion for the detective to use the language he did.

I relate this experience simply for the benefit of other members who may also possess detective cameras, in order that they may avoid the unpleasant experience I had at Manhattan Beach.

(To be continued.)

## Bibliography.

WE have upon our editorial table quite an accumulation of books that interest the photographer. The crowded condition of our pages has prevented our taking notice of them until now.

**PADDLE AND PORTAGE.** By Thomas Sedgwick Steele. Boston: Estes & Lauriat.

This is another of those charming records, from the pen of Mr. Steele, of his travels with canoe and camera from Moosehead Lake to the Aroostook River in Maine. To the tired man of business, the over-worked toiler in our great cities, this life is the most certain panacea for all his ills that we know of. The extremely interesting account of travels before us embraces a complete statement of the author's wanderings in the Maine woods, with canoe and camera, in search of recreation, health, and those realms of nature where she revels in picturesque scenes, that can be caught with the lens and indelibly impressed upon the photographic plate. The book is interesting from cover to cover, and has made us long again to return to scenes of the same beauty that we enjoyed a year or two ago. Nobody who contemplates making such a delightful journey should fail to read "Paddle and Portage." It will fill him with energy before he starts, tell him where to go, how to live, and also how to overcome difficulties; at once health-giving and teeming with interest. For weary and tired photographers we know of no better way of gaining a new lease of life than such a journey as here described. An excellent map, 20 x 30 inches, of the region travelled, accompanies the volume.

**WILSON'S LANTERN JOURNEYS No. 3.** New York: Edward L. Wilson.

The interesting travels of Dr. Wilson in the East have been carefully collated, and the volume before us embraces a concise description of the places visited. These journeys are intended to accompany the lantern slides made by the author to illustrate these interesting districts of Eastern travel, and are the result of personal observations. We have before us the

third volume of these lantern journeys, which embraces the following: Sinai Peninsula and Petra; From Hebron to Bethel; Round about Jerusalem; Picturesque Palestine; From Damascus to the Sea; A Thousand Miles of Nile-Land; Nile Tombs and Temples; How They Live in Egypt; Egypt and the Egyptians; Egypt, Old and New; New Pictures of Old Places. These occupy 323 pages of a neatly printed small octavo volume, and are full of interesting personal observations by the author.

**HANDBUCH DER CHEMIGRAPHIE UND PHOTO-CHEMIGRAPHIE.** Von J. O. Mörch. Düsseldorf: Ed. Liesegang's Verlag.

This is an excellent little manual of the methods used in etching plates for book illustration, whether the drawings are produced directly or by the aid of photography. The book is divided into two parts; one treating of the materials, plates and etching solutions, used in the art, together with the presses and other accessories; the other describing in detail the special processes used to produce different classes of pictures. In 150 pages of a small octavo volume, we note clear statements of the methods of procedure, and quite a number of formulas to be used in producing photo-engraved plates. Eight full-page illustrations give examples of the kind of work done by the various processes; these include a pen and ink portrait; pen and ink pictures of scenes in the Inventions Exhibition in London; a view made with pen, India ink and lead pencil; a reproduction of a wood-cut from the "Gartenlaube;" the title page of the "Gartenlaube;" a portrait of Bismarck from a negative by Loescher & Petsch, of Berlin; a group from a negative by G. Klosz, reproduced in lines and stipple; and two views in lines and stipple from a photographic negative. This will give an idea of the scope of this highly interesting little manual, which should prove useful to all engaged in photo-engraving.

## What Our Friends Would Like to Know.

*N.B.*—We cannot undertake to answer communications of a technical character except through the columns of the BULLETIN. Correspondents will please remember.

*Q.*—C. S. K. writes: I took a drop-shutter view, soaked it in the No. 1 solution alone, and probably put in too much pyro, as No. 2 would not bring the picture quite out. I could see the outlines plainly, but could not, by using a strong solution of No. 2, bring it out any plainer. I washed off the pyro as soon as I saw it was coming slow. What more could I have done? Is there any solution that I could have used that would have brought it out?

*A.*—Your question is not very clear, as you do not tell us the composition of your devel-



oper or your stock solutions. Send us the composition of your solution and the way you make up your developer and use it, and we will try to help you out.

Q.—T. F. B. sends a print and writes: Inclosed is a photograph which I printed from a negative taken by an officer of U. S. S. Hartford, at Payta, Peru. The exposure, he tells me, was an ordinary one, the cap of the lens was taken off but once, and none of the group moved during the exposure. Yet the objects behind four of the persons in the group can be distinctly seen through them. There is no trick whatever in connection with the photograph, and every one that has seen it has been unable to explain it. As this may be of interest to all who read the BULLETIN, will you be kind enough to make it a subject in its columns, and if possible explain the cause of this curious phenomenon.

A.—We have carefully examined the print, and have come to the conclusion that if the operator did not remove the cap of the lens twice, somebody else did, or it dropped off and was replaced by somebody else; and the four persons, in the group through which objects can apparently be seen, must have moved between the first and second exposures. It is a fact beyond question that light does not pass through opaque objects.

Q.—H. N. B. writes: Will you please give me directions, through the columns of the BULLETIN, for purifying a silver bath. I have an impression that my bath contains many impurities, and I wish to know how to cleanse it and reduce to the right strength.

A.—You can probably purify your bath by first boiling it down to a small bulk, then making alkaline with a little ammonia and placing in the sunlight for a day or two. After this the impurities will be precipitated, and when filtered and made just acid with chemically pure nitric acid, on diluting to the proper strength the bath will be fit to use.

Q.—J. F. H. writes: Will you please give, through the columns of the BULLETIN, a good silver bath and the time to float the albumen paper? Also a toning bath to correspond? Also tell me what colors on backgrounds are best to use for photographs, cameotypes and plain vignetting.

A.—We cannot do better than refer our correspondent to O'Neil's formula for silver bath and toning solution, which we published in these columns in the last issue of the BULLETIN. [See page 543.] In regard to the backgrounds, if we can see examples of the kind of pictures that are desired, we can tell better the kind of background we think it desirable to recommend.

## Views Caught with the Drop Shutter.

SMITH & PATTISON, of Chicago, send us a number of examples of cabinet pictures burnished on the Baldwin Duplex Rotary Polisher. They are certainly most excellent examples of this kind of work.

The patent for the Satchel Detective Camera has just been granted to Mr. R. A. ANTHONY, of New York. This is certainly the neatest variety of this kind of camera that we know of, and it works perfectly.

C. F. CONLY, the well known Boston artist, and his wife, paid a visit to New York lately, and enjoyed themselves viewing the city and its environs.

BELL, the noted photographer of Washington, who has recently made the fine pictures of Mrs. Cleveland, is in New York with his wife. His pictures are well known in our city, and a great many have been sold here.

H. W. & M. A. PARDOE have recently reopened their studio at Keithsburg, Illinois. We wish them every success.

J. W. QUEEN & Co., of Philadelphia, send us their handsome catalogue of photographic apparatus. It contains every requisite for both the amateur and professional, including a large variety of apparatus from the factories of our publishers.

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NEGATIVE  
ON THE  
STANLEY DRY PLATE.

*A Study*  
BY  
C. F. CONLY, BOSTON, MASS.

PRINTED BY  
J. B. HUNTER,  
ON N. P. A. PENSE  
EX. BRIL. ALBU-  
MEN PAPER.



# ANTHONY'S Photographic Bulletin.

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Prof. CHARLES F. CHANDLER, Ph.D., LL.D., *Editor*.

ARTHUR H. ELLIOTT, Ph.D., F.C.S., *Associate Editor*.

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OCTOBER 9, 1886.

Vol. XVII.—No. 19.

## THE FRILLING OF GELATINE PLATES.

Of all the ills that modern dry plates are heir to, surely frilling is the worst. To begin to develop a plate, to watch the growth of the image in all its beauty, to become elated at the fine gradations of light and shade in the negative, and rejoice at the capture of some fine piece of charming scenery after a long day's tramp, and then to see the gelatine begin to leave the glass, is one of the most exasperating trials that we have ever experienced. And unfortunately sometimes the plates that show this defect are otherwise particularly perfect in every other feature. Great sensitiveness, perfect freedom from fog, and beautiful capabilities in giving fine negatives appear to have been most carefully attained; and yet, unfortunately, all these things go for naught, for the plates will frill in spite of every care.

Now this frilling of gelatine plates has been attributed to various causes. Some claim that the use of soft gelatine will make this trouble, and recommend that hard gelatine should be used. But here we are met by the fact that plates made with hard gelatine develop somewhat more slowly than those made with the softer varieties, so that too hard gelatine may give plates that are apparently slow, when the truth is they are not less sensitive, but develop more slowly than those made with softer gelatine.

Another cause of frilling is the use of potassium carbonate in the developer. It is a curious fact that potash, when united with various organic acids, gives salts that are very deliquescent. Soft soap is nothing more or less than a salt of potassium with several fatty acids; and the reason the soap is soft is because these potassium salts readily absorb water. Potassium acetate is another example. Even potassium carbonate is highly deliquescent. The corresponding sodium compounds, on the other hand, are not deliquescent, or only slightly so. Hard soap, for example, is a sodium salt of fatty acids. It therefore appears that sodium salts should cause less frilling than potassium salts, from the general behaviour of these compounds with organic substances; and that it is true is the experience of every one using a developer. While we do not know that a particular chemical compound is formed between the gelatine and the potassium salt, yet there is undoubtedly a greater softening of the gelatine from the use of potassium salts than when only sodium compounds are used, and this is entirely in keeping with the behaviour of the former metal towards organic bodies generally.

But this softening effect has its advantages, in that it enables us more readily to get at and develop the silver compounds imbedded in the gelatine film. Therefore the use of a moderate amount of potassium carbonate in a developer gives greater detail with less chance of fog from forcing than can be attained without it in the use of sodium carbonate. It is therefore better to use potassium carbonate in the developer, even at the risk of frilling the plate, for we have several methods by which we can stop frilling in its first stages. Furthermore there is less danger from frilling at the present time than there was formerly, as the manufacturers of dry plates are using harder gelatine.

Nevertheless, as frilling will occur occasionally even in the best regulated dark room, either from warm water or solutions that have become overheated, it is well to have always a bath at hand into which one can plunge a dangerous looking plate. In our own experience we have found a strongly acid solution of alum answer every purpose. This solution is made by taking a saturated solution of alum and adding, say, one ounce of water to the pint, in order to have it not quite saturated, and thus prevent it from crystallizing. It is made acid by the addition of one fluid dram of strong oil of vitriol to every quart of solution. In use, care should be taken that it is kept acid. This bath has a double function—it hardens the film and bleaches out any pyrogallol stains on the negative, and we invariably use it, even if the plate has no tendency to frill during the development.

Our attention has been directed to this subject of frilling by an able article on the same topic that appeared in a recent issue of the *British Journal of Photography*. The author gives an interesting account of the action of the various salts that produce frilling, and makes mention of the potassium salts, although he does not appear to have noted the character of those salts that we have mentioned above.

The frilling itself is undoubtedly due to osmose, the property that fluids of different densities have of mingling with one another when placed with only a membrane to separate them. This tendency of fluids to mix without any outside force, simply owing to their own powers of diffusion, differs widely according to the nature of the fluid, its density, and also its temperature.

As any effort to simplify the process of development is always of interest to our readers, and as we do not believe that we have found the very best remedy for frilling in the bath mentioned, we quote the following from the article that we have referred to above. Speaking of the use of alum, the author says:

“Many people object to allowing alum to touch the film before it has been fixed. Whether or not such dislike is groundless is not for us to argue here, but we can give quite as effectual a cure, which is quite devoid of any such danger as that supposed to lurk about alum.

“This is nothing more than a solution of common salt of moderate strength—the exact strength is immaterial—applied to the film as soon as development is complete. Sodium chloride is remarkably weak in osmotic action, holding one of the lowest places on the list; but besides this it possesses the curious property of nearly neutralizing the osmotic action of such salts as potassium carbonate. If the plate, after development and after fixing, be plunged into a dish of salt water, the tendency to frill will be as effectually counteracted as by means of alum; in the case of the developer it will also tend to stop further action, while with the hypo there will be no danger of precipitating sulphur compounds in the film.”

We have not yet had time to try the remedy recommended, but hasten to let our readers know of so simple a device, which, coming from such a high authority, bears every evidence of having been thoroughly tested. Perhaps with the addition of sulphuric acid this solution may completely supplant the alum bath we have hitherto used with success. But care should be taken in this matter of adding sulphuric acid to a solution of salt, since free hydrochloric acid would be produced in the bath, and this might aggravate the evil of frilling instead of curing it, the diffusive power of hydrochloric acid being very great. Nevertheless, if acid salt solution could be used, it would undoubtedly bleach the negative if stained with pyrogallol. We shall try it. In the meantime we recommend the simple salt solution to our readers.

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#### EDITORIAL NOTES.

IN the last number of *The Photographer's World*, we note a new modification of the mercury intensification process. Mr. Chapman Jones uses a solution of corrosive sublimate containing a few drops of hydrochloric acid to bleach the negative, the blackening afterwards being effected with a five to ten per cent. solution of sodium sulphite made slightly acid with citric acid. The negative must be soaked in an alum solution before using the sublimate, to insure elimination of hyposulphite, and then well washed. It is claimed that this method tends to clear up the plate, and the shadows are never blocked up.

WE note that Professor Edward C. Pickering, of Harvard College Observatory, gave an account of his work at the recent meeting of the British Association for the Advancement of Science. This work includes the photographic observations upon star spectra carried out at the Harvard Observatory with the aid of the Draper Memorial Fund. Already four stars have been discovered that show a spectrum crossed by bright lines.

THE solar eclipse of August 29th, from which some valuable scientific results were expected in regard to the nature of the corona, has not yielded the information that was needed. Dr. Huggins says: "The partial phases of this eclipse furnished conditions which would put the success of the photographic method beyond doubt, if the plates showed the corona cut off partially by the moon during its approach to and passage over the sun." This has not been shown, and the corona remains as great a puzzle as ever.

M. D'HAW, of the Civil Engineering Department of the University of Ghent, Belgium, has succeeded in taking orthochromatic photographs without orthochromatic plates or color screens. He waits until the daylight begins to be weak in the evening—when it contains few blue and violet rays—and then places the object to be photographed near the window of an ordinary room, and gives a very long exposure. Using a Dallmeyer 12 x 15 rapid rectilinear lens with No. 5 stop, and an exposure of twenty minutes, at seven o'clock in the evening an excellent photograph was made, well balanced in light and shade; the subject being a blue and white vase, with red geraniums and white lilacs, together with the green leaves and twigs, standing upon a deep bluish-violet drapery. It is suggest-



ed that this principle be carried out by using gas or oil lights, which are weak in blue and violet rays, to make orthochromatic photographs of colored objects.

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AN application of colored screens for orthochromatic photography has recently been well carried out by Mr. Fred. E. Ives, of Philadelphia. He has presented us with several prints illustrating his method, and they are truly remarkable. An account of these pictures will appear in our report of the Society of Amateur Photographers of New York.

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A SERIES of negatives of photographs of lions in motion, made by Mr. Muybridge, were recently exhibited at the Philadelphia Academy of Sciences by Dr. Leidy. The animals were represented as being spotted, particularly the male, although such spots were not to be seen on the animals themselves without close observation. The photograph of the female showed the spots less distinctly than the male. Dr. Leidy remarked that he had been told that photography frequently revealed characters which could not be detected by the eye.

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#### PHOTOGRAPHIC ART SOCIETIES.

DEAR BULLETIN,—I wish to briefly express a thought which I have had for some time, but was resuggested by Dr. Elliott's article on "The Functions of a Photographic Society." We all know the rapid development of artistic tastes and tendencies, amounting to almost a "craze," is pervading the community even in the smallest towns.

Now all large cities hasten to organize art societies and provide rooms for the exhibition of art products, but small towns cannot afford to provide such exhibition rooms, yet would develop and progress faster if they had such facilities. Here comes in my idea. If photography be admitted to be an art, and all classes of the community become interested, the meeting-room of the society might be the exhibition room in smaller towns, where all art products and experiments might be exhibited; and the greatest cost of maintaining such an exhibition room would be the care of it, lighting and warming it, and attendance to keep it open and oversee its contents. The photographer gives his whole time, and needs a reception and exhibition room constantly warmed and attended.

Then let all the interests combine to provide a large and spacious exhibition room, and the local photographer have his gallery in connection, and for the use of the rooms he would light, warm, and attend them. It might be—probably would be—for the advantage of any photographer to provide such accommodations for local art interests in smaller towns for sake of the concentration of interest and attention upon his business, and the community of feeling that would be promoted thereby. If such a system could be commenced, it would do more to bring photography into full communion with the brotherhood of art than all the professional photographic societies dealing with technicalities of pure photography can ever do.

I offer the idea as a possibly useful supplement to Dr. Elliott's valuable suggestions.

Yours truly,

FREDONIA, N. Y., September 20th.

E. K. HOUGH.

PHOTOGRAPHERS' ASSOCIATION OF AMERICA.

BUFFALO, N. Y., September 25, 1886.

To the Editors of the BULLETIN.

MY DEAR SIRs,—To-day I received official notice from Mr. W. H. Potter, President Photographers' Association of America, that Mr. Charles T. Stuart, of Hartford, Conn., had been awarded the one hundred dollar (\$100) cash prize for the best essay presented at the Convention held in St. Louis, June 22 to 25, 1886.

Fraternally yours,

H. McMICHAEL,

*Secretary.*

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DAYLIGHT ENLARGEMENT.

BY ANDREW PRINGLE.

[Read at the English Photographic Convention at Derby.]

UNTIL quite lately I have always been under the impression that solar enlarging in every shape was a tedious, a complex, a difficult, and an expensive amusement and business. I know better now. When once I set myself to try the process deliberately and carefully, the difficulties which at first presented themselves disappeared, and those which I had in imagination anticipated never put in an appearance. I had taken the unknown for serious, and like a *cowherd* I had seen a lion in the path. My present object is to blow away any unfounded fears that may appal any one present who feels the desire to produce solar enlargements, and to show such diffident persons that there is no real difficulty in the matter if the business is set about with proper appliances and proper intelligence. I am surprised that so few photographers attempt to produce their own enlargements, and that so many send their negatives to firms who make a business of "enlarging and finishing" from photographers' negatives. I have nothing to do with what is called "finishing," which consists, more or less, in painting, stippling, hatching, and generally transmogrifying the enlargements; that is out of my line and to a certain extent contrary to my creed. I mean to stick to the amplification of negatives by means of daylight, and what I shall say refers to printing enlarged positives on paper or opal, or glass coated with an emulsion of (chiefly) silver bromide and gelatine. The same practice would be equally applicable to albumenized sensitized silver paper, or platinotype paper, or carbon tissue, if to what I shall suggest were added arrangements for greatly increasing the power of the light used, arrangements such as condensers, heliostats, and so on, with which I have nothing to do and of which I have very scanty knowledge.

The arrangements necessary for solar enlarging are (1) optical, (2) mechanical, (3) chemical. The optics of enlarging consist briefly in using the greater conjugate foci of lenses to do the work done in ordinary negative work with the lesser conjugate foci. This is not a very accurate statement, for in both cases both foci are used, but I fancy I shall be understood. In making my enlargements I use any doublet lens which will "cover," as the phrase is, the plate or portion of plate to be enlarged. The limit in the other direction is fixed only by the length of my room or of my arrangement for holding and squaring my easel. It is highly important to work at a window looking toward the north; before I annexed my wife's store-room I used a west window, and all but ruined a film negative by letting the sun shine on it. I am very fond of the sun, but I like it in its proper place, which is not shining on my enlarging apparatus. The room

which is used for enlarging purposes should be illuminated with a "safe" light, but this light should be of such a kind as to be shut off at will, for when much light enters the room it is difficult and even impossible to focus properly, for a tentative focus is much better than a mathematical one, as will soon be found by any one trying to enlarge.

The mechanical arrangements may be said to consist of centering and squaring. To start with, at least the center of the negative, the axis of the lens, and the center of the sensitive surface ought to be all in one line, but in later operations facility for shifting all the parts will be found convenient, if not necessary. But squareness or parallelism of all the parts being essential from beginning to end, the negative, lens, and easel must always be parallel to each other. An ordinary camera used wrong end foremost at once suggests itself as likely to prove useful for at least one part of the arrangement. Take a camera large enough to hold the largest negative or positive to be enlarged, and fix it in a north window with the dark slide to the outside, and open both front and back of the slide, screw a lens into the usual place, and you have the first part of the apparatus necessary. Of course no light must get into the room except through the negative and the lens. The camera need not be dead level, but if it has any cant there will be greater trouble in arranging the apparatus for holding and sliding the easel. The window may be glazed opposite the negative with ground glass, or tissue-paper may be pasted on, but in any case landscape or clouds must not be visible through the glass behind the negative. For my own part, not caring to leave my 10 x 8 camera fixed in the window of the store-room, I bought a sort of camera fitted with a set of carriers for various sizes of negatives, and arranged so that the carriers bearing the plates can be slipped in sideways and held in position by a spring, which also prevents the light getting into the room when changing one negative for another.

The rest of the arrangement I made myself, and it consists, roughly speaking (and rather roughly made, too), of a base-board, an easel, and arrangements for sliding the easel back and forward. The base-board is six feet long and sixteen inches broad, and right up the center, nearly the whole length, is a slit half an inch—it ought to be a whole inch—wide. Along this slit runs a piece of wood about a foot long, and to this at right angles is firmly fixed the easel, which is kept accurately perpendicular by a triangular right angled-piece of wood to which the easel is screwed. As the camera is fixed in the upper half of the window, the base-board has to be supported on tressels, the height being such that everything is centered. This centering I accomplished by putting into the carrier a 10 x 8 plate having a cross drawn at its center, and having the lens at its center also, and throwing the image of the cross upon the easel, which also had a cross at its center. A careful use of the spirit level, combined with the above precautions, enabled me to fix the base-board and easel, accurately centered, once for all; and as the camera was dead level and the base-board also, and the easel running *easily* but steadily in its slit, nothing remains but to stretch the camera and slide the easel till the proper size and focus are found. I have a bolt on the runner by which I fix it after focusing, and along the base-board I have marked certain distances, so that by a glance, first at a table of enlargements and then at my base-board, I can at once very nearly hit off the proper focus. If I always knew exactly how much of my negatives I meant to enlarge, I could focus without ocular examination by the use of tables, but I never enlarge the whole of a nega-



tive, and until I see the image on the easel I never know how much I want to enlarge. If my sensitive surface is on paper, I pin a white sheet permanently to the easel and the sensitive paper on top of it. If I am going to enlarge on glass or opal I use runners tacked to the face of the easel and focus on an opal plate, substituting for it the other sensitive plate when about to make the exposure. This takes a long time to describe, and it took me a longer time to make, but it is really all plain sailing if a little trouble be taken to ensure accuracy and steadiness. There should be no "wobbling" of any kind about any part of the arrangements, else the thing will get out of the square, and any movement in the room will produce blurring.

When about to make an enlargement I first find the approximate focus and determine what part of the negative I mean to enlarge, in other words, I throw the image out on the focusing screen or easel. By sliding the frame holding the negative and also the front of the camera, I place the picture as I wish it on the easel, and then proceed to focus accurately by sliding the easel back and forward; I am then ready to consider the question of exposure. I never put any stop into the lens, but I make sure that the lens is of sufficient focus to "cover" well the part of the negative undergoing enlargement. Nothing under these circumstances is gained by stopping the lens, but time is lost. The exposure—always using the same sensitive surface and the same aperture of lens in proportion to focus—varies with the distance of the sensitive surface from the optical center of the lens, and the exposure varies as the *square* of this distance. I will not trouble you—nor run the risk of fooling myself—with a formula, you can "take it as read." As a rule, when I am in any doubt I pin in the middle, or in any ticklish-looking part of my enlarged image, a small bit of my sensitive surface, and I try it first.

In the course of exposure a vast amount of dodging is practicable. I have a lot of boards with apertures of different shapes and sizes cut out, and with these I vignette by moving the board back and forward. Any hard bit of a negative—very black on the sensitive enlarging surface—gets extra exposure through small holes cut in the board. In fact there is hardly any dodging of this kind that cannot be easily and effectually carried out.

I do not intend to go into the chemistry of development, there are so many kinds of paper, and opal, and glass surfaces on which we may enlarge. But, briefly, I recommend for positives a developer heavily restrained and watery. Ferrous oxalate seems the developer best adapted for this process. But I find a powerful developer of any kind is apt to produce heavy, hard, black and white positives.

I never before realized so fully the importance of *good negatives* as I did when I came to enlarge from different kinds of negatives. A negative may be dense, or it may be thin; in both cases, if the gradations of light and shade be correct, a good, even a perfect enlargement can be made. But if a negative be blocked up with density or wanting all over in "grip," it will not enlarge to satisfaction. So my advice to every one is to take a little extra trouble and make thoroughly good negatives.

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*All communications for the columns of the BULLETIN should reach us on Monday preceding the day of issue, to insure their publication at that time.*

# THE TREATMENT OF NEGATIVES AFTER DEVELOPMENT: A MYSTERY UNRAVELED.

BY W. B. BOLTON.

[Read at the English Photographic Convention at Derby.]

It is a difficult matter to find anything interesting to communicate to a body of practical photographers nowadays, but as my name has been put down on the list of contributors of papers, I must do the best I can by relating an incident that occurred recently, and pointing out the warning it conveys.

Some weeks ago a friend complained to me that he could not get the clear shadows in his negatives that he saw in those of other operators, and was inclined to attribute the fault entirely to the plates he obtained commercially. He was not quite a novice in photography, as he had worked in the old wet-plate days, and I therefore felt pretty certain that when he said his dark room arrangements were all right he was speaking the truth. At the same time it was difficult to understand why several different brands of plates, most of which I knew from my own experience of them, or from reliable hearsay, to be quite free from the fault, should behave in the extraordinary manner complained of in an isolated case. So, in reply to his query as to what I thought could be the cause, I contented myself by making the conveniently evasive remark, "Oh, I suppose it is something in your way of working." My friend departed satisfied—that he could not get much out of me.

I may say that one or two examples of his work that he brought to show me were neither better nor worse than a very large number of negatives one meets with; fairly good printers, though slow, from the all-pervading veil and the extra density required to give necessary contrast.

A week or two later I happened to be in his dark room, and remembering our last conversation, I inquired if he had got over his difficulty. "No," was the reply; "I have tried So-and-so's plates (some I had recommended), and if anything they're the worst of the lot." This was too much to believe readily, so I suggested he should develop a plate and see if we could conjointly fathom the mystery. We soon had a plate exposed, and he proceeded to develop, I watching closely, but could detect nothing to explain the fog. His "method of working" was careful in the extreme, and his dark room was, as he had said, "all right;" if it had a fault it was, he explained, that his cistern was too small, and he had to be very economical with water. Curiously, the very care he exercised, that in economizing water his negatives should not suffer, proved to be the indirect cause of all the trouble. The development completed, the negative was carefully washed by soaking it in the dish, three or four times refilled with water, and then slightly rinsed back and front under the tap. Next it was transferred to a separate dish of clean alum, and left for I dare say five minutes, while we discussed the situation. Then we took it out and examined it. "You see it looks all right up to now; they always do until they're fixed, and then the beastly stain appears," he remarked; and I could not help confessing that there certainly appeared nothing to complain of at that stage, and the mystery began to deepen. It was but the "darkness that precedes the dawn," for in a moment all was clear—except the negative. Pushing aside the curtain, he opened the door and calmly walked out into the open air, and proceeded in a leisurely manner to wash the negative at a tap, where there was a plentiful supply of water for green-house purposes.

I had time to fill and light my pipe before he had finished, and as he came in again he said, "Now we'll fix it."

"Is that the way you always wash your negatives?" I asked.

"Yes; I like to give them plenty of water."

"But you don't expect any decent plate to stand that, do you?"

"Oh, yes," with a rather contemptuous smile; "*I* am never troubled with frilling; *my* water isn't warm."

"I'm not talking about the water, but the light. Did it never strike you that bromide of silver is sensitive to light?"

He looked at me for a little bit in a dreamy way, as if light had struck *him*; and that *he* was sensitive, he proved by closing the door and remarking quietly, "By Jove! I never thought of that; I have been specially careful to get all the developer out of the film before going into daylight, and it never occurred to me that anything more was necessary. I've been blaming everybody and everything else but my own stupidity. Never mind; while this fellow is fixing we'll develop another, and see which is best."

"Stop," I said. "Before you put it into the hypo, see if it looks as clean as it did before."

"Well, I don't think it does, but that may be owing to my just coming in from the light."

He would not give in without a struggle.

Another plate was exposed and developed, and then my friend expressed his indifference as to whether he emptied the cistern or not. He did not quite succeed in doing that, but at least he gave the negative a good washing both before and after fixing, and before opening the door. Then we sallied forth, and my friend, after one glance at the negative, let slip the not very elegant remark, "Well I'm blowed!" Then, after a pause, "Yes, you're about right; it *was* something in my 'way of working.'"

I will not vouch that the preceding is a *verbatim* report of our conversation, but at least it is an accurate summary of the spirit of it, and as such I hope you will accept it.

Now for the moral. If any of you—only one of you—think that an unfixed plate will stand with impunity exposure to daylight, try the following experiments: Cut an unexposed quarter-plate into strips, and place one of them in daylight for half a minute or a minute with one-half covered with a card. A certain amount of discoloration takes place, which many people suppose disappears in fixing; but if you fix this exposed strip you will see that this is not the case. Next dip half of another strip into water, and take it into daylight; the wet portion will blacken much more rapidly, and take a deeper color than the dry; and with some plates exposed in sunlight, a depth sufficient for the shadows of a transparency can be attained, and, what is more, will not be very greatly reduced in the hypo. If the plate be moistened with sulphite of soda, dilute ammonia, or anything having a slight solvent action on silver bromide, a still deeper discoloration will take place.

I do not imagine that very many photographers are in the habit of taking their negatives into the open air before fixing, but I know that many like to examine the image by daylight, "just to judge its density before fixing." It is a rather useless and illogical proceeding truly, for if the density be wrong it cannot be remedied without fixing; and then if intensification be required there is a little



unnecessary veil to intensify along with the picture. On the other hand, a plate that has been kept from white light until it has been fixed and washed will be in the best possible condition to undergo any subsequent treatment.

I told my friend I should make a "fearful example" of him, and I have tried to do so in as gentle a manner as possible. Should there be one more sinner present to take the hint, this paper will not have been written for nothing.



## NOTES ON EMULSION-MAKING AND PLATE-COATING.

BY W. K. BURTON.

[Read at the English Photographic Convention at Derby.]

I PROPOSE to say a few words on my favorite subject, namely, emulsion work. I am not going to give a new formula, or to write anything startling, or even—I fear—at all new; but to draw attention to a certain number of matters of detail, the real importance of which is frequently overlooked, even if the bearing of the matter has been taken into consideration at all.

Taking first of all the formula. It may seem strange when I state my belief that the factor of this, which usually receives the least attention—namely, the water—is the one, a variation in the quantity of which has the greatest influence of any on the time taken to gain sensitiveness by the process of boiling or stewing which is to immediately follow. I presume, of course, that the quantities of the soluble bromide and iodide, and of the nitrate of silver, are not such as to permit an excess of silver nitrate. If there be no such excess, then I say that the quantity of the water used will have more influence on the time or temperature, or both, required to gain sensitiveness than will either the excess of bromide or the quantity of the gelatine, provided always that there be enough of the latter to hold the bromide of silver in suspension. To take an example: A boiling formula is used with 400 grains of silver nitrate, and only 10 ounces of water to both solutions. This is very nearly as concentrated as the emulsion can be made without a very considerable loss by precipitation of the bromide of silver in a granular form. By boiling, sensitiveness will be gained in a certain number of minutes.

Now suppose the experiment be repeated with all quantities the same but that of the water, and that doubled. It will be found that much more than double the time will be required to gain sensitiveness, being likely four or five times as long, a result which would certainly not arise from doubling or halving the excess of soluble bromide or the amount of the gelatine.

If this applies in the case of an emulsion, neutral or acid, intended to be boiled, it applies still more strongly in the case of an ammonio-nitrate emulsion; for, as first pointed out by Eder, it is not according to the quantity of ammonia used, but according to the percentage, that there is a gain in rapidity with a certain time of stewing at a certain temperature. Now, in an ammonio-nitrate emulsion, the quantity of ammonia is regulated by the weight of silver used, entirely independently of the amount of water, so that the *smaller* the quantity of water the *larger* the percentage of ammonia.

I have adopted for all formulas, whether boiling or with ammonia, as a mean between the very smallest quantity of water that can be used, and a very large quantity, which introduces difficulties of various kinds, a total quantity of 12

ounces to each 400 grains of silver nitrate used. I do not think it makes much difference whether the water be equally divided between the two solutions or unequally, or whether the method of Davis of adding the silver nitrate in crystals to the solution of soluble bromide and gelatine be adopted. If, however, either solution is to be more concentrated than the other, I prefer that it be the silver nitrate solution.

On the vexed question of iodide I am almost afraid to say a word, there is so great divergence in the experience of different workers. I will therefore protect myself by saying that I refer only to the experience of my own working, and do not attempt to lay down a general rule, when I say that the highest sensitiveness is to be gained with tolerable certainty only when a very considerable percentage of iodide is used. I mean by a considerable percentage, say  $\frac{1}{20}$  as much iodide of potassium as nitrate of silver.

I now come to what is, I consider, a most important part of the process of plate-making, namely, that which lies between the termination of the boiling or stewing process and the coating of the plates. There appears to be a common impression that, at the end of the stewing process, a certain fixed amount of sensitiveness is gained, and that it is of but little consequence, so far as sensitiveness is concerned, what further action takes place.

Now there can be few greater mistakes than this. I think it is no exaggeration to say that, even supposing washing to be so performed that all excess of bromide is removed, the emulsion may be so treated that plates representing a sensitiveness of anything between one and ten may be produced; that is to say, the sensitiveness may be degraded, by ill-judged manipulation, to one-tenth what it might possibly be. And in this connection it should be borne in mind that it is always that emulsion which is capable of giving the rapidest plates that is most liable to be damaged in the matter of sensitiveness. I will take, first of all, the mere freeing of the emulsions from the soluble salts, etc. A certain trace of these left in the emulsion does not appear to damage sensitiveness, but it appears to be liable (and especially in the case of an ammonia emulsion) to produce a peculiar surface-fog during drying. It was W. Cobb who first pointed out to me that lack of sufficient washing was the cause of a surface-fog that probably most workers in emulsion are familiar with, and my thanks, at any rate, are due to him. It is not generally known how difficult it is to remove the last trace of ammonia (and presumably of other soluble constituents of an emulsion), but the difficulty was brought forcibly home to me not long ago.

An emulsion had been precipitated in alcohol, had afterwards been cut into pieces and allowed to soak in water for forty-eight hours, after which it had turned out unsatisfactory. It was all melted up, was allowed to set, and was broken up into pieces to dry, so as to be sent to the refiner. Whilst it was drying, some hydrochloric acid happened to be used in the room for cleaning plates, whereupon a very distinct vapor was seen to rise from the drying emulsion, indicating, I have no doubt, the presence of ammonia.

That the method of getting rid of the soluble salts and ammonia must be thorough, in the sense of its being capable of ridding the emulsion of the last trace of them, probably every one will admit; but there is another point I wish to draw particular attention to, and that is, that it must not be such a process as will give rise to an undue increase in the bulk of the emulsion. This brings me to a point on which I wish to lay much stress. It is the keeping down of the

quantity of water in the finished emulsion. I think few matters are of much greater importance in emulsion work than this.

There are two reasons for keeping down the quantity of water. One is the mere fact that the less water there is in the film the less there will be to dry out, and that therefore the dangers of possible fog, etc., during drying, which are always present, but which increase with the sensitiveness of the emulsion, will be reduced. But another is of still greater importance, I think. It has its origin in the fact that the bromide of silver in a liquid emulsion inclines to sink from the surface, and that the more dilute is the emulsion the more rapid is the sinking.

With bromide of silver in the very finest state of division, such as we have it in a very slow emulsion, this depositing action may not be so rapid that the bromide will perceptibly fall away from the surface of the film in, say, five or ten minutes, even in a fairly dilute emulsion; but just as the size of the particles of silver bromide increase, so does the rapidity of deposition, until, when we get to the size of particles common in the more rapid emulsions, the deposition is so rapid, that at ordinary temperatures it has a perceptible effect before the emulsion can set on the plate. The result on the dried plate, if the bromide has perceptibly settled from the surface of the film, is that the sensitiveness of the emulsion is greatly decreased, whilst the quality also suffers. If the settling has gone on to any considerable extent, the result is actual fog.

These facts have been published over and over again, but I think I am right in saying that there is not even yet a due appreciation, by most, of the amount of deterioration that is liable to be brought about by a slight amount of settlement; nor do they bear thoroughly in mind the fact that the more sensitive the emulsion, the more chance is there of deterioration, and the greater is it likely to be in quantity. I will state as a general rule that, except where ice is used to hasten setting (and probably even then), it is well to have at least as much as thirty grains of quick-setting gelatine to each ounce of emulsion.

Where great sensitiveness is not required, it may be sufficient simply to add as much gelatine as may be required to the washed emulsion; but I will state that, in my experience, there is always liability to a reduction in sensitiveness from pursuing such a course. Sometimes this is but slight, but often I have found the reduction to be very appreciable, and to be greater in the case of a very sensitive emulsion than in that of one less sensitive. Probably the nature of the gelatine has a good deal to do with this, but I have been unable to find any rule.

*(To be continued.)*

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[From Photographisches Wochenblatt.]

## MY CYANIN EXPERIMENTS WITH GELATINE EMULSION.

BY V. SCHUMANN.

*(Continued from page 344.)*

*The plate should be of moderate sensitiveness.*—I am accustomed to work with a highly sensitive emulsion, generally employing the method of boiling and digesting with ammonia according to Dr. Eder. As long as I adhered to this with my cyanin plates, I obtained no results. Plates of miserable appearance, which fogged, were the consequence. I therefore made an emulsion which I allowed to become congealed immediately after mixing, and then washed it. I



hoped to replace, by strengthening the cyanin bath, what the emulsion lacked in sensitiveness. These plates certainly worked much better and did not fog. But they were not sensitive, and the sensitizer failed to supply the missing function. One plate had too much, while the other had not enough. Between the two I might find what I was looking for.

I now used the oxide of silver ammonia method and was very near to my mark. I found the cooked emulsion to be better prepared and have given it the preference for use. My plates were prepared with bromide of silver gelatine cooked for half an hour. I had used a medium hard gelatine from Fischer, a very good article, uniting the advantages of the Nelson gelatine 1 (surface free from bubbles) and the hard Simeon gelatine (power of resistance).

For the foregoing purpose I prefer cooked emulsion to the ammonia emulsions, it having less tendency to fog than these, and giving less streaks.

*The gelatine must contain no alum.*—A cyanin solution dissolved with alum discolours at once.

The alum also destroys the sensitizer; gelatine containing alum will therefore never be suitable for cyanin plates. This reaction I have always used for the discoloration of strongly sensitized cyanin plates. The destruction of the coloring matter is not so quick here as in solution, but it is the surest way to remove the blue tone. To sulphate of iron the same conditions apply as to alum.

*Only home-made plates should be used for orthochromatic experiments.*—It is necessary under any circumstances that the condition of the emulsion matter should be known. Even in own-made emulsion, foreign ingredients may disturb the sensitizer in its action. The smallest quantities are sufficient under such circumstances, the coloring matter being present only in very small amount.

All this shows that it is not a matter of indifference which plate is used if the influence which the optical sensitizer exercises upon the color-sensitiveness is to be found out. This is particularly the case in spectrographical experiments.

Fortunately the taking of colored objects is not of such a fine nature as spectrum photography. A plate such as I buy from the manufacturer, of moderate sensitiveness, is very suitable for my cyanin process, but it should be free from iodide of silver. Plates containing iodine give good negatives, but the effect of the sensitizer does not come much into consideration.

The sensitizing of the plate requires two baths—the one for soaking, the other for coloring the film.

The first bath, for soaking, consists of

Ammonia.....	$\frac{1}{2}$ to 4 c.c.
Distilled water.....	200 "

This is filtered, and best used in a tray. The well dusted plate should remain in it at least two minutes, but it does no harm to bathe it a few minutes longer. It is recommended to keep the bath in motion and let it run over the plate from time to time, and to examine the plate frequently during soaking. If some uncovered spots should be observed (small particles of dust, or air-bubbles), keep the tray in motion until they are removed.

A bath of pure water does good service; but I observed that in this, small air-bubbles will form on the sensitized side, which can only be removed by good shaking of the tray and taking the plate out now and then; and even then it happened that the film would not form evenly, which was particularly the case on

the edges of plates which had remained unpacked for some time in my closet. Such parts which were not touched by the preliminary bath will also not be affected by the cyanin bath which follows; they remain during developing, and are the cause of many spots.

A bath of water and ammonia is best for the purpose. It loosens the plate-coating, so that the cyanin solution can penetrate as much as possible; it prepares the film for a uniform acceptance of the coloring matter; and prevents the adhering of small cyanin particles, secreted sometimes in the sensitizing bath. That the sensitiveness is increased by the ammonia is no disadvantage—the increase of sensitiveness is not considerable—but it must not be disregarded, easily causing formation of fog when too sensitive plates are used for sensitizing. For such, little ammonia is added to the preliminary bath, reducing to  $\frac{1}{2}$  c.c. Even such a small quantity will give the bath qualities deserving regard.

If no preliminary bath is applied, success in sensitizing by the following cyanin bath is in no way excluded, but the danger of formation of spots increases considerably. Clouds will form if the cyanin solution does not spread evenly; small circular spots where air-bubbles settle; black dots where particles of dust settle; and any quantity of blue, opaque spots, if secreted particles of coloring matter in the cyanin bath remain on the film. The latter happens only with rich cyanin baths containing little alcohol. The dots are of blue color if the cyanin is not destroyed; and transparent if a saturated alum bath is applied after developing.

The bathed plate is left to drain for a few moments, and is then put at once into the second bath, for sensitizing. I recommend for this the following composition:

Strong ammonia.....	2 c.c. to 4 c.c.
Absolute alcohol.....	10 "
Cyanin (1 to 500).....	5 " 10 "
Distilled water.....	200 "

The cyanin is to be dissolved in absolute alcohol.

The bath should run over the plate without any obstruction, and act from two to four minutes. The plate is then taken quickly from the tray, left to drain, and placed upon clean blotting-paper. The film should be touched as little as possible with the fingers, as spots may form easily. After a few minutes the back of the wet plate is cleaned, care being taken that it dries quickly.

Sometimes cyanin solution will collect on the lower edge of the plate which will not be taken up by the blotting-paper. This I have removed with a piece of filter-paper.

The composition of the cyanin bath is the result of many experiments. But I will not maintain that more or less of one or the other parts of this bath gives defective films. According to my observations, stronger baths (ammonia) will easily lead to the formation of fog, while, on the contrary, weaker ones give insufficient sensitiveness.

The water is the worst part in the preservation of the cyanin bath, decomposing the coloring matter even with exclusion of light. Still we cannot do without it, for it makes it possible for the color solution to penetrate the emulsion-coating. A coloring of the surface of the film is not sufficient to obtain the fine effect, and it is best that the emulsion-coating is penetrated evenly by the cyanin solution. To hinder the decomposition of the cyanin in the presence of water, the

bath contains a small quantity of alcohol. I have selected absolute alcohol, being generally purer than common spirits, and I have sensitized a large number of plates and have not had to complain about any considerable disadvantages. Only now and then deviations in the sensitiveness would take place after use, and therefore I applied only absolute alcohol for the second part of my experiments. For a long time I have striven against the application of a rich alcohol bath. By degrees I used up to 100 volumes of absolute alcohol to 120 volumes of water.

The bath gains in durability, but the color-sensitiveness of the plate decreases, and, what is much worse, the whole coating receives a cloudy appearance. With a negative of this kind absolutely nothing can be done; not only does it become almost totally foggy, but it suffers also in the lighter parts such a great non-sensitiveness, that even the intense maxima in yellow and orange have a dimmed appearance.

Seven and a half to ten per cent. of absolute alcohol (in the formula the alcohol which is in the cyanin-solution has to be considered) are sufficient to preserve the freshly made bath for several dozen of plates, and to accelerate the drying.

The cyanin bath should always be freshly made. The aqueous alcoholic solution changes when standing and will then sensitize somewhat weaker.

The color-sensitiveness of the plate depends upon the quantity of cyanin in the bath. The behavior of cyanin in this regard is different from many sensitizers, which in almost minimum quantity guarantee maximum effect. (Eosine). The sensitizing influence is already observable if only a trace of the cyanin is present, but a plate which is to reproduce a strong red or yellow requires more. I have tried baths which contained as much as twenty-five per cent. cyanin solution. But the greater number of the baths rich in coloring matter were useless, because they produced a yellow film.

The principal fault of the plates which I observed when using strong baths, was an entirely irregular coloration. Then the coating appears upon a blue ground, but with numerous veins of the same somewhat lighter color. In the dark room this cannot be observed so much, because the plate has in brown light, as used by me, a disagreeable dirty brown color. But the veins show much more upon the plate when fixed. This peculiar formation of fog I have watched in daylight (because the dark room is not suitable for such an observation), and I have bathed a large number of gelatine plates, new and old ones, at the open window. A few seconds after immersing dark spots would appear, which increased and formed the before-mentioned veins, which therefore are nothing else but the less colored film between the several spots. These light formations proved to be identical with those marble-like spots which appear in a half-fixed gelatine plate. I observed repeatedly that the bromide of silver is never dissolved evenly by the hyposulphite of soda, part of the same crossing the film in irregular lines (they are only visible after the bromide of silver has mostly been dissolved) and disappearing always last from the negative.

The cause of this fog formation on the cyanin plates is to be found largely in the presence of the alcohol which is conducted to the bath by the cyanin solution. If the quantity of the alcohol is reduced with the same quantity of the cyanin, a much more evenly colored surface will be the result. Still another evil is met. The film is taken bronze-colored and strongly covered from the bath, and is insensitive; it is, therefore, likewise useless for a photographic view.



If a bath containing much cyanin is mixed with ammonia, it will be found that these marble-like formations will appear much less. One can convince himself of this if such plates are examined in reflected light. The illumination in the dark room is sufficient for this.

(*To be continued.*)

## YESTERDAY AND TO-DAY; OR, JUSTICE TO ALL.

By MRS. E. N. LOCKWOOD, *of Wisconsin.*

[Presented at the St. Louis Convention of the Photographers' Association of America.]

THE past five years have marked the most radical change in the manipulation and formula for making negatives of any like period since photographs were first invented.

The processes, from being so full of complication that our laboratory was not unlike a well-filled drug house, has steadily been lessening the number of bottles and chemicals and doing away with the unwholesome and poisonous fumes, until even our dark room may be kept as fresh, clean and neat as many parlors, and the death-dealing and offensive odors are put to flight. The labor of former years was constant and full of little perplexities that none but "one who has been there" can fully appreciate.

Sixteen hours was about a day's work, because of the needed preparation of glass, compounding of various chemicals, cleaning up plate holders and the like, which must needs be done out of regular business hours.

And sometimes with fear and trembling would we make our first exposure in the morning, and perhaps only a beclouded or obscure shadow of our customer would we obtain, or one well variegated with spots and streaks; and then how we would have to search for the cause and try to overcome it as soon as possible, fully putting into practice the old song: "If at first you don't succeed, try, try, try again."

Oh the old, old days! How they flit before our eyes as we turn backward to the records of the past. We do not long for them to return again; no, no, let the past remain under our feet, or serve for a background to the present. Those experiences have lifted us up a little higher and broadened our lives in some measure; at least they have been stepping-stones to something better.

To-day we can work with clean hands and clothes, and be always ready for our customers from sunrise to sunset, in sunshine or in cloud, if we only have a well-filled shelf of plates of some good reliable brand.

We used to think making 18 negatives a very hard day's work, and we recall the terrible bad feeling of head and throat after being shut up almost constantly for several hours in the dark room with the fumes of the necessary poisons. No wonder photographers looked pale, worn and hollow-eyed, nor that they grew cross and irritable. Now we can make three times as many negatives with one-third the weariness and anxiety, thanks to the dry-plate inventors. Long may they live to enjoy much good and happiness for the blessings they have brought to others.

Yet with this greater ease in making negatives, comes to us the annoyance of low prices and a great variety of them.

The wide-spreading knowledge of what the real cost is of making a negative and print (aside from the thousand and one expenses necessitated in fitting up

and running a gallery) is being figured on by thousands of amateurs, and hence they feel we charge too much.

And again, we have "old-time" photographers putting cabinet photos away down, because some one else does, or because they expect to make more money at it by the increase of patronage; and all of these things seem to call for some change to be made which shall equalize prices and be just and right for all. We are certain that in union there is greater strength, and, as one thought in this matter, would suggest that this body of photographers unite, if possible, upon some price for cabinet photos which shall be considered as leaving a fair profit for the expense and time of making one sitting full length (I think \$3 for one dozen is as low as they can be made, and this only under certain conditions), charging always more for larger heads and also for each additional sitting. I am well aware many have attempted this alone and single-handed, but found it hard work to adhere to it when others in the same place would advertise "pictures at less price, and as many sittings as were desired free of charge."

Yet it seems to me it is but just and right to make at least one style of photo as low as we can afford to, which will give the poorer class and those who are easily satisfied an opportunity to obtain what they often much desire, but cannot afford at our present price of \$5 and \$6 per dozen. And again, those who are very desirous of several sittings, and to experiment on toilets, are the ones to pay for the extra work and expense.

Will not this give an opportunity for each class to pay for what they have, and at the same time protect ourselves from being imposed upon by the fancies of some of our irrational customers, as well as receiving some recompense for extra material and time wasted, and also be a fortification against "Cheap Johns" and amateurs?

If this honorable body so decide, I will most gladly be one to join with them in anything which they believe will be just and equitable for all, and will do my best towards educating the public into a later and better method of conducting photography, even though it should place my prices down to \$3 instead of \$5 and \$6 for cabinets.

Will it not be good to appoint a committee during this convention to draft a scale of prices for the different styles of cabinet photos and also the price to be charged for each extra sitting, and submit it to the association, that they may act upon it during this annual gathering? I hope it may be thought well to do this, and that it may lead us all into a way of doing business which shall be just and right for every one, and satisfactory to both patrons and photographers.

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### THE STANLEY PHOTOGRAPHIC ROOMS.

BY FRED. H. ALLEN.

THE recent opening of what are conceded to be the finest equipped and most spacious photographic rooms in New England, calls for a more extended notice than the occasion has hitherto received. Occupying the entire third floor of the newest and finest block upon the principal street of Lewiston, Maine, they cover together an area of 90 by 50 feet.

Ascending by two easy flights of stairs, finished in cherry, beautifully carved, one stands upon a spacious landing, from the right of which he enters a reception

room, and from the left the operating room. As this is the most important to a photographer, we will consider this first. The floor is 28 by 49 feet, with a low, flat sky-light 18 feet square, together with a wall light so arranged as to be, when desired, entirely closed. This room is provided with beautiful posing chairs, made expressly, and carved in solid mahogany, together with the finest specimens of backgrounds and accessories which the famous artist Seavey is capable of producing. A greater variety of material for more extensive combinations is probably not found in any operating room outside of a few great cities of America. The finest lenses, from a No. 8 Voigtlander euryscope, capable of producing life-sized portraits, down to an apparatus for postage-stamp portraits, are to be found in these rooms. At one end of the room a hall leads directly into the reception room. Not far from this is the door of a spacious and well-ventilated dark room.

Passing the hall door through which we entered, we find ourselves in a spacious room adapted for the preparation of papers, as well as for the washing and toning of prints. Adjoining this, opening also directly from the operating room, is the printing and mounting room. Here the most ingenious and novel appliances for rapidity of work, ease of printing and mounting, are employed; plenty of light, without the operators being subjected to either intense heat or extreme cold.

Retracing our steps to the opposite end of the room, we pass through the hall, and find ourselves in the reception room. Immediately to our left is the counter, show-case and office, finished in cherry, with colored glass and other ornamental fixtures, presenting a unique and attractive office for the attendant in the reception room. This room is 36 by 32 feet in size, with several small windows, and one large bay window, from which a view of the street in both directions can be obtained. Upon one side of the room is a large case filled with life-size portrait and composition pictures of surpassing brilliance and excellence of mechanical finish. Upon the other a cabinet containing fine frames, *passé-partouts* and novelties of photographic materials. In the center is a carved table in cherry, upon which the bric-a-brac and statuary are placed; above it the chandelier, which is suspended from a heavily frescoed ceiling; all in low, quiet tones, in which grays and olive-greens predominate. The walls of the room are tinted in harmony with the ceiling, being frescoed with a heavy dado. A carpet of exquisite pattern covers the entire floor, and ecru curtains, covered with lace, temper and soften the light, producing a most artistic and delightful effect. Easels, containing some of the specimens of Mr. Stanley's crayon work, are scattered about the room, the whole presenting a picture gallery well worthy of the attention of any visitor to the City of Lewiston. The presiding genius here is the kind and courteous Mr. Stanley, the proprietor. Opening out of the reception room is a spacious dressing-room, supplied with all the necessities of the toilet.

Through a heavily draped archway one passes from the reception room into the "studio." This is a large room, 15 by 20 feet, beautifully lighted, in which Mr. Stanley executes his orders for what are termed crayon heads. It is well here to turn our eyes backward, and for a moment review the history of this somewhat remarkable man. Mr. Stanley's earliest artistic efforts were with crayon. While yet a boy in one of the back towns of Maine, he conceived the idea of making crayon portraits. His success was such that friends encouraged



him to send to the State Fair, then held at Portland, some specimens of his work. Mr. Stanley had never seen a crayon portrait, had never received an hour's instruction, until after he had received the first prize at the State Fair for crayon portraits. It was during his visit to the fair which awarded him the prize, that he saw for the first time a crayon portrait not made by himself. Nor was he familiar with the process of photography until he established a photographic gallery of his own. Hiring a skillful operator, he began business, but finding that, after eight weeks, he could execute a better negative than his operator, he concluded to do his own photographic business. For some years he carried on his work, at the same time executing many commissions for crayon portraits, until he devised and secured a patent upon an apparatus for making portraits without the use of the pencil. This is done by what he calls an atomizer, so arranged and adjusted as to throw a colored spray upon the picture in coarse or finer particles, arranging the direction and intensity of the spray by means of hoods placed over the orifice of the atomizer, and by the hand upon the bulb. With this instrument Mr. Stanley is able to execute the most correct and striking likenesses in much less time than would be required for the more labored and less accurate crayon.

In order that he might secure the greatest advantage in his photographic work, Mr. Stanley conceived the idea of making his own dry plates. In this work he has also been successful; and associating with himself a twin brother, who is his second self to all appearances, a man of like ability, energy and intelligence, he has enlarged this business until the production of the Stanley dry plate is second to none in this country, and their quality unsurpassed. Messrs. E. & H. T. Anthony & Co. are the sole agents for these excellent plates.

But to return to the studio. It is here that one may find Mr. Stanley, in the leisure moments between his attention to sitters in the photographic room and the business of his dry-plate establishment, working diligently upon portraits, for which he always has a plentitude of orders.

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#### OUR ILLUSTRATION.

THE beautiful silver print with which we illustrate this issue of the BULLETIN is from a negative made by Mr. Conly, of Boston. As a study in portraiture it is unexcelled, and for artistic posing and lighting it is a model in every sense of the word. We are happy in being able to present our subscribers with this beautiful picture, which was made with a Dallmeyer lens on a Stanley plate, and printed on the celebrated N. P. A. albumen paper. If any one can produce a more beautiful result we should like to see it.

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“No, PAPA, I do not want to marry yet. What I want is a man that does not drink, smoke, go out at night, gamble, bet, over eat, etc.—in short, a man who has no vices and is always good.” “My daughter,” said the affectionate father, “you are but a stranger here; heaven is your home.” And we believe the old gent was right about it.—*Bainbridge (Ga.) Democrat.*

# ANTHONY'S Photographic Bulletin.

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E. & H. T. ANTHONY & CO., Publishers.

## THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.

EXPERIENCE MEETING, AUGUST 25, 1886.

(Continued.)

Mr. FRISBIE—I think it would be a good idea for some of the members to ascertain whether any legal proceedings can be taken to prevent anything of that nature occurring again—whether they (the Manhattan Beach Company) can legally prevent us from taking photographs in a public place, and whether there is any redress in case of an arrest under those circumstances. Any place that is open to the public is a public place, so long as the public are allowed there and spend their money at that place.

Mr. SIMPSON—If I went there to-morrow, carrying my camera, and the detectives of the hotel recognized me, I think they would try to lock me up; but I have not the slightest doubt but that, even if I used the camera, I could have legal redress as against the Company if arrested.

Mr. BEACH—I know of instances where photographs were taken there last year, and this rule must be a new one and must have originated this year. I think it is a subject that

we should look into. I presume that the proprietors have a right to make such rules and regulations regarding their grounds and railroads as they see fit, but I don't see how they can prevent a person taking a photograph wherever they wish to. Frequently photographs are taken before they know it.

Mr. SMITH—I suppose some of the fellows go down there with girls and don't want to be caught with them, and they make a complaint to the Superintendent against pictures being taken in that way.

Mr. LEAMING—In regard to the Custom House business, I should think that the authorities might be seen or heard from, and they might give a certificate to the members of the society.

Mr. BEACH—That is a very important subject. The Photographic Society of Belgium sent out a call for an International Photographic Congress, at which this point was to be brought up. They desired that special regulations or special privileges be given by the Custom Houses throughout the nations to photographers and their apparatus, that no inspection be made where the negatives were liable to be damaged by exposure to light. I have never seen the matter pushed by any other society, and if the matter is ever put into any shape, I think this society ought to take some steps toward having it carried out.

Mr. Ripley was then called on to relate his experience.

Mr. RIPLEY—I have not any special experience to relate, but I might speak of our trip to St. Louis. It was a remarkably pleasant one, and the St. Louis photographers and plate manufacturers there did everything that could be thought of or hinted at to make the visitors happy and comfortable while there. They got up an excursion which was remarkably pleasant, chartering one of the largest Mississippi cotton boats, and the St. Louis ladies did their part in furnishing no end of refreshments, and everything was served in a most delightful way. Among other things particularly laughable that occurred on the trip was a huge-mouthed negro. They had hired a band of colored minstrels to entertain the multitude, for there was a multitude on that boat. We have no boats here that have the capacity that some of those boats have. In that minstrel band was one man who was blessed with the most abnormal mouth I ever saw. He played a number of instruments, the banjo and other instruments, the names of which I have forgotten. He kept himself very busy, and everybody was more or less enter-

tained by his mouth. They brought him a goblet filled with beer, and, without stopping the music at all, except the singing, he leaned over, opened his mouth, grasped the glass with his teeth, drank up the beer, and sat it down again. I took an instantaneous picture of the gentleman while he was singing. [Mr. Ripley then handed around a blue print from the negative; the picture was very comical.]

At the exhibition, the manufacturers were well represented, as usual, from all parts of the country, St. Louis photographers particularly. I think I am perfectly safe in saying that it was the finest exhibition of pictures ever exhibited in this country. It has been fully described in the photographic journals. I must refer particularly to the German exhibits. They show that our portrait photographers have a great deal to learn. There were some exhibits from Ryder, of Cleveland, and Landy, of Cincinnati, and others. They showed some beautiful work. The whole affair was most enjoyable from beginning to end.

Mr. BEACH—An idea occurred to me since Mr. Simpson has been speaking of his difficulties at Manhattan Beach, that there is still left one opportunity for amateurs to go there unmolested, and that is to wear what is called the "Vest Camera." The vest camera takes very pretty pictures, and nobody sees you carrying anything, and no detective would suspect that you had one on.

Adjourned.

#### REGULAR MEETING, SEPTEMBER 14, 1886.

THE first regular fall meeting of the society was held at its headquarters, 122 West 36th street, on Tuesday evening, September 14, 1886, at 8 o'clock.

*President* BEACH in the chair. C. W. DEAN acted as Secretary in the absence of Secretary Granger.

In opening the meeting, the President announced that the special social meetings set down for Friday evenings would be discontinued, for the reason that an experienced photographer had been engaged to open and light up the place every week-day evening, and would be on hand from 7.30 to 10 P.M., and would stand ready to give information to any member, and assist and show them in regard to the practical points respecting the development of dry plates; hence every evening, except those devoted to general meetings of the society, would be set apart for social meetings, and members were particularly invited to make good use of them.

Continuing, the *President* said: We have for a long time had under consideration the matter of engaging an experienced photographer, who could be of assistance to beginners by showing them how to avoid errors and how to succeed, and as we now have enlarged facilities, the Board of Directors concluded that the time had arrived for the experiment to be tried. In order to help pay for the services of the photographer, the Board has authorized its House Committee to supervise all orders and regulate all prices for silver printing from negatives sent by members, and for any other special work, such as the development of exposed plates, copying, enlarging, preparation of lantern slides, etc.

Since all work to be done by the photographer will be under the supervision of the House Committee, extra care will be taken to see that it is done well, and members are assured, in advance, that special attention will be given to their negatives, both as regards the best prints that can be obtained from them, and their care while in use.

The rates to members for printing, established by the House Committee, have been posted on the "Bulletin Board," and will be given to any member, on application, by Mr. R. Baker, chairman, to whom all work should be addressed, at the society's headquarters. We trust that members will feel that it will be for their interest to give the society their earnest support in this matter, as it is the expectation of the Board to make the society a vehicle for teaching photography to beginners as well as to promote the knowledge of those more advanced in the art. It should also be understood that the Board has decided that all members shall be privileged to receive information and instruction from the photographer without extra charge; hence a new beginner, becoming a member, will more than save his entrance fees and annual dues in the information and practical lessons which will be freely given. Freshly sensitized paper is to be furnished at short notice for the use of members.

I also desire to announce, that in consequence of the frequent inquiries I have had from members for the developer now well known as the "Beach Potash Developer," I have authorized the photographer whom we employ to make it up in convenient quantities for use. It is to be composed entirely of distilled water and chemically pure chemicals, and will be sold at a nominal price. With this developer any beginner can, by heeding a few simple directions, obtain better negatives, and



with less trouble, than is usually possible with ferrous oxalate.

We have a few lockers left for the use of members, the annual rental is \$3.

The first fall lantern exhibition was then announced for Wednesday, September 29th.

The synopsis of minutes of meeting of August 25th were read and adopted.

The Acting Secretary then read the following:

[Letter from Joseph R. Greatrex.]

CLAREMONT, HEATON CHAPEL,  
NEAR MANCHESTER, ENGLAND,  
August 4, 1886.

*To the Secretary of the Society of Amateur Photographers of New York.*

DEAR SIR,—In your report of “The Society of Amateurs of New York,” *Photographic News*, July 30th, I notice that it contains a paragraph to the effect that in the *British Journal of Photography* for March 19, 1886, appeared the report of the Lantern Committee of the Manchester Photographic Society, which gave 2,000 candle-power to the oxy-hydrogen light.

In reply to this statement, I beg to contradict it, the mistake having arisen perhaps in consequence of a private communication to Mr. Lewis Wright, in which the writer, who is the Honorary Secretary of the Lantern Section, asked his opinion as to a statement made by one of our members, who said he had obtained 2,000 candle-power with the lime light and which we very much doubted.

The only report which has ever been issued by the Manchester Photographic Society upon the above subject will be found on page 298 *British Journal of Photography* for May 7, 1886, and if you will kindly refer to it, you will see that our results are far short of 2,000.

Trusting you will favor me by a correction of the paragraph referred to, I beg to remain,  
Yours faithfully,

JOSEPH R. GREATREX,  
*Hon. Sec. Lantern Section Manchester Photographic Society.*

[Letter from T. H. Blair.]

BOSTON, September 8, 1886.

*Society of Amateur Photographers, No. 122 West 36th Street, New York.*

GENTLEMEN,—It is my desire to present for competition among the amateur photographers of the country, a silver cup, the design of which will be in keeping with the art, and the cost to be two hundred and fifty dollars,

the designers, being, in all probability, Tiffany & Co., of New York.

In studying over the manner in which this prize could be placed so as to promote the best interests of photography, as well as honorable competition and good feeling, it has been suggested to my mind that the following plan would be most successful.

At the next exhibition of each of the amateur clubs, a prize picture, or class of pictures, be selected by a board of judges who will be chosen by the club; and at a national exhibition (to include all of these pictures so selected), a board of judges shall be chosen who are not members of any of the competing clubs, whose duty it shall be to decide the successful winner of the club cup.

The cup shall then be held by the club whose member wins it, to be competed for in like manner from year to year or at intervals, to be decided by a vote of the associated clubs.

The judges who shall make the final award are not to know either the name of the member contributing, or the club of which he is a member.

The class, or classes, which shall be allowed to compete have not yet been decided, as I wish to have the counsel of members of clubs who have become versed in such matters by their intercourse with or management of similar exhibits.

I shall, however, suggest that the following rules should be observed:

1. No one practicing photography professionally, either the whole or a portion of his time, shall be allowed to compete.

2. Each competing picture shall be made by the contributor personally, allowing him to use prepared sensitive plates and paper.

3. No picture having been previously entered for competition shall compete for this prize.

No restriction whatever shall be placed upon the style or make of lens, camera, plates, or paper used, neither shall the contributor be allowed to place conspicuously on his exhibit the name of any of the apparatus or materials used in making the competing pictures.

My object in admitting only non-professionals is that many amateurs have but a few days in the year in which to practice photography, and therefore could not compete with the professional possessing equal good taste who makes the art a daily study.

Also to discourage the class who style themselves “amateurs,” yet employ Sundays and holidays in making photographs for prices which the professional could not afford.

In submitting this letter to you, I ask your criticism and suggestions, and desire to know if I may have the honor of counting your club as one which will compete for the cup.

Yours very truly,

T. H. BLAIR.

*The President*—I have received a communication from Mr. Robert S. Redfield, of Philadelphia, relative to joint exhibitions, in which he states that his society thinks that it is better to let each society form its own special rules for the general exhibition, but that the three societies shall mutually agree to hold a general exhibition, once in three years, in each of the three cities. The chairman of the committee on this matter is absent to-night, and it will therefore have to be laid over until the next meeting.

I have here an improved plate holder, sent to me by the inventor, Mr. M. P. Warner, of Holyoke, Mass. He said that he thought he would try and get up a plate holder that would not leak light, and his idea was to make it in one piece, so that there would be no chance for the light to get at the plates. There is a rigid central septum of thin blackened iron which separates the two sensitive plates. The frame of the holder is made larger than usual to admit the plate in the space occupied by the slide. In each end of the holder is a long, flat, bow-shaped brass spring, having at its ends bent-up fingers, acting as claws, to hold the four corners of the plate. In one end there are flat, short springs, so fixed on the interior top and bottom sides of holder as to catch and hold the ends of the bow-spring when the latter is pressed back against its wood backing. To insert a plate the slide is drawn and one end of the plate set into the claw ends of the bow-spring located at the end of the holder opposite that where the slide is drawn out. Then the other bow-spring is bent back and held by the two small, flat springs. Immediately the plate at once drops into position; then the two flat springs are released by pressure inward with the forefinger, when the bow-spring flies out tightly against the corners of the plate, holding it very firm. This same spring is pressed back and held by the small side springs when the exposed plate is to be removed.

From the specimen pictures sent by Mr. Warner, it is evident that the holder does all he claims for it.

We have with us to-night Mr. E. S. Glover, who has kindly brought with him an improved album for holding photographs. Mr. Glover, will you please explain the album?

Mr. E. S. GLOVER—I will occupy but little of your time in showing you this album, as I just want to explain what the album is, and how it is different from other albums, thinking it might be just the thing for amateurs. Of course I got it up in the first place as an ordinary album, with a very few differences. Here we have leaves upon which pictures might be painted, in fact they were to be sunken panels, and I have some in this book. That leaf [illustrating] has a sunken center and a raised border, so that when the book is closed the surfaces of the pictures will not come together and rub against each other, and one might paint upon this leaf even in oil, and shut the book up.

After getting this book up, and binding it, I found it was very nice for this purpose, but that often I do not have enough sketches to fill the leaves, and so I originated this idea of attaching and detaching them at pleasure, and also enlarging the book by adding more leaves. The hinges are metallic, one for every leaf, making up, when complete, the back of the book, so that at any time it can be added to, and I can take out any portion at any time I please and put it together, uniting it with pins.

So it can be increased to a great thickness, and made into one or more books, and adapted to amateur photography. I thought it might be well to have open leaves, with cards to shove in the orifice, as shown here, so as to take them out at any time, and mount pictures on them. And you can take them out and burnish the pictures at any time. To facilitate this, a leaf can be taken out, just as the ordinary photograph card is put into place. As these little hinges are not as thick as the leaf, they do not interfere with the burnishing. I would like to leave this sample for the inspection of the society, and if any of the members have a suggestion to make, I shall be glad to receive the same at any time. There are some members of this society using this album, and seem to think it very good for the purpose, and if they have any improvements to suggest, I will be pleased to have them submit them.

[The album was very neat, strong, and compact in appearance, and embodied an excellent idea, as by its use photographs can be mounted on both sides of separate cards or leaves and then be burnished and put back in the book.]

Mr. BEACH—I had a call from Mr. R. D. Gray the other day, and he brought with him an improved vest camera. You recollect last spring we exhibited a camera, but it was necessary

to have a special vest for it, which was very stiff and clumsy to put over your person. But this is an arrangement to pass underneath the ordinary vest, and has a very much smaller lens, and is less bulky, so that it appears as if it was an ordinary button.

There is also on the outside an index, or pointer, so that you can tell how many plates you have exposed, and he has arranged it to make six instead of eight exposures as heretofore. The idea is that every time you take a picture you make one turn, and that rotates the sensitive plate, and brings a new surface in front of the lens. This is what we term a real detective camera. I will pass around some negatives; you will notice the pictures are circular instead of wedge-shaped as heretofore.

Mr. Edward P. Gray, of San Francisco, Cal., one of our corresponding members, has presented thirty slides of Californian scenery, some of which were made from paper negatives. Speaking of the development of the latter, he says that he has tried different developers, including the sal soda and sulphite; the standard formula, or Newton's yellow prussiate; soda and potash; and Cooper's formula of soda and sulphite, and he finds none of them yield him as satisfactory negatives as the formula of the Beach developer. I have never found any difficulty to obtain fine results on the Eastman paper with this developer. It will work well too for positive prints.

By purchase, the following additions have been made to the Society's library since August 25th: "Instruction in Photography," 1886, by Capt. W. de W. Abney; "Photo-Engraving and Photo-Lithography," 1886, by W. T. Wilkinson; "Burton's Modern Photography," seventh edition, 1886, by W. K. Burton, C. E.; "Dallmeyer on the Choice and Use of Photographic Lenses," sixth edition, 1886.

Presented by F. C. Beach, "Photography for Amateurs," by T. C. Hepworth.

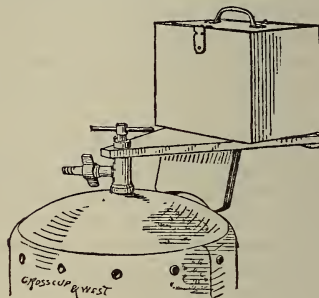
Mr. BEACH—I now have the pleasure of introducing to you Mr. Frederick E. Ives, of Philadelphia, who has kindly consented to exhibit an improved lantern which he has gotten up with a view to portability, so that amateurs and others can get up an oxy-hydrogen light in the country without much expense.

Mr. IVES—The most remarkable feature of the lantern is its compactness. It occupies, when ready for carrying, something less than one-fourth the space occupied by the smallest of the ordinary lanterns.

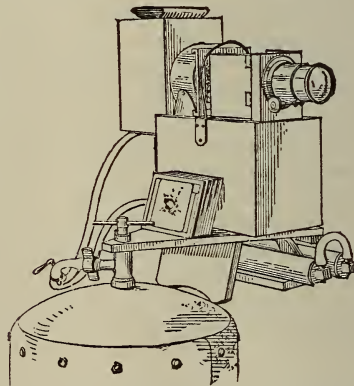
Although very compact, it has lenses and jet of the usual size and power, and will make projections of the largest size. I use it myself,

with the ether oxygen light—also my invention. Ether supplies the hydrogen element, with scarcely more apparatus than is required for the oxy-calcium light, but the light is as brilliant as the oxy-hydrogen.

This [showing the ether cylinders] is a piece of apparatus which I made myself, and it is not as well finished as those made for sale. I will show you this lantern as soon as I have it set up. It ought to take about sixty seconds to set it up in working order. I will show it to you in operation with the ether-oxygen light as soon as I can get it in order.



Ives' Compact Optical Lantern, with attachment by which the Oxygen Cylinder is made to serve as Operating Stand.



The Lantern in operation, with Ives' Patent Lime Light.

The above cuts need but little explanation. In one the lantern is shown packed in the box. In the other it is open, sitting on top of the box ready for operation.

Mr. BEACH—While he is getting the light ready, I will pass around a few specimens of orthochromatic photographs made by Mr. Ives.

[These represented a picture entitled The Midnight Sun, one of Prang's chromos. One taken on an ordinary plate showed no sun; the next, with ten minutes' exposure on a chlorophyll plate, showed it very plainly; the last,



taken on an exceedingly rapid ordinary gelatino-bromide plate, exposed forty minutes with Mr. Ives' specially prepared colored liquid screen behind the lens, showed precisely the same excellent true relations of color as by his chlorophyl process.]

[Briefly described, the lantern was held in a box  $5\frac{1}{2} \times 6\frac{1}{2}$  inches, by about  $8\frac{1}{2}$  inches long. On the under side of the sliding cover was the lens and front portion of the lantern, so when the hinged angular back was opened, it was only necessary to slide out the cover, turn it upwards, and the main portion of the lantern (the condensers and tube) was ready. A Russian iron box slid inside the main box; this was drawn out and set upon the cover, forming the body of the lantern, directly behind the condensers. The oxy-hydrogen jet was quickly adjusted to the cover, in position behind the condensers, and there were two side hinged brass wings extending from the objective back to the slide carrier; they acted as a screen to prevent extraneous side light from detracting from the light of the picture on the screen. The apparatus was so compact that Mr. Ives had arranged a small wooden arm to be fastened on top of the oxygen cylinder, forming a support for the lantern in operation.]

Respecting the "ether saturator" (which consists of two brass cylinders, each about two inches in diameter by a foot long, with a porous filling and suitable connections), Mr. Ives explained that it was at least as free from danger as any other form of oxy-hydrogen light apparatus. Although a portion of the oxygen was diverted through the ether saturator to produce the hydrogen element, no serious explosion could possibly occur in it, because it never contained enough oxygen to do more than make a loud snap and blow off the rubber tubing. Even this could never occur if the apparatus was used according to the printed instructions.

The apparatus was largely used in the West, and supplied a ready means for obtaining a brilliant, steady light at small trouble and expense.

A recess of five minutes was taken and the lights lowered, when several lantern slides were passed through the lantern and projected on the Society's paper screen.

The pictures were exceedingly clear and bright, showing that there was true merit in this mode of illumination.

Mr. Ives manipulated the lantern, and remarked that it was very desirable, in order to regulate the oxygen supply, to have a valve on the gas cylinder provided with a very fine

thread, so that two or three full turns would be necessary to let on the full amount of oxygen required.

Much interest was manifested by the members in the working of the lantern, and they closely questioned Mr. Ives about it.

At the conclusion of the recess the meeting reconvened, the lights were turned up, and members were invited to ask Mr. Ives any questions about the lantern. No one responded.

Mr. ROCKWOOD—I was giving a little exhibition at my house three or four months ago, and for a screen used a white sheet. A gentleman who was there, asked me if I had ever tried the experiment of covering the back of it with black paper. I said no; and he said that by its use I would get a much better light and make a better picture. There is this to support his statement: That on the other side there is a great amount of light which could be utilized that is now lost. I would like very much to know if any one here has experimented in this direction, and if so, if it is really an advantage, for I do not want to spoil my big sheet if not to improve it.

I presume the theory is that the screen absorbs a certain amount of the light, but why putting black paper at the back of it should make it any brighter, I cannot understand.

Mr. IVES—I have tried it, and there is this about it: The light that passes through a thin white screen may be reflected back against it so as to weaken the contrasts. The black cloth would prevent that. But if your screen is in close contact with the wall, there is no utility in the black back.

Mr. ROCKWOOD—My screen was eight or ten feet from any wall. In that case would there be any advantage?

Mr. IVES—If there is any light reflected back from the wall behind the screen I am sure that there would be an advantage. But I prefer two thicknesses of white cloth, which makes the screen opaque without making it look darker. I have heard that statement about the black cloth, and made experiments to prove that an extra sheet of white cloth is better than the black, although even the black sheet is of some advantage if the screen is removed from the wall.

*A Member*—I think the matter resolves itself into the necessity of having an opaque screen.

Mr. IVES—It should be opaque, but made opaque by the thickness or closeness of the white material, rather than by backing with black cloth.

Mr. BEACH—I have here [showing] a small,

thin glass tank, such as Mr. Ives used in making the experiment of photographing that colored chromo which was talked about a little while ago. The special compound color solution that Mr. Ives uses in the tank appears of a deep reddish-orange color, and does not act like a solution of any single dye when used to photograph through. It is a mixture of aniline yellow, red and violet, and Mr. Ives does not know himself what is the exact amount or proportion of these colors in the solution, but he has explained how it was obtained and can be duplicated.

Mr. ROCKWOOD—I was in London within the last two weeks, and examined a good many reproductions of pictures of the National Gallery. Some by Braun, of Dornach in Switzerland, and Paris. It is not known what process he used. The negatives appear to be collodion, and are wonderfully brilliant; yet there is no doubt in my mind but that the process is closely akin to, or founded upon, the new developments in dry-plate color-sensitive photography.

I brought home with me pictures by Rembrandt. They are portraits of himself, one at the age of thirty-five and the other at the age of sixty-five. I know that Braun had some method of bringing out the red, for the color is wonderfully bright in these pictures.

Mr. BEACH—Mr. Ives, I would like to ask you whether you put the paintings that you photographed in a bright diffused light or in the sunlight?

Mr. IVES—I prefer to place them in the sunlight, because that brings the exposure down somewhere in the neighborhood of five, ten or fifteen minutes with my slowest process; but I have no place where I can get sunlight now, and these were made with the light from an ordinary sky-light.

Mr. BEACH—Do you use a large stop in the lens?

Mr. IVES—I used in several cases the largest stop, and in others a smaller one, but always with a good deal of light.

Mr. ROCKWOOD—Mr. Ives, can you confirm my impression that sunlight in some degree neutralizes strong contrast of color in a painting?

Mr. IVES—I believe that it does.

Mr. ROCKWOOD—In confirmation of that proposition, I was at work one day in a warm, golden October sunlight, and obtained very peculiar results, such as I never obtained before or since. In this case the painting was reproduced as if it was in black and white, and Mr. Ives is the first gentleman I have

ever met with who has obtained similar results.

Mr. IVES—I think your direct sunlight would be about the same in a measure as using a color plate. It does give some advantage, but it is not intense enough to give anything like an orthochromatic effect.

Mr. COOPER—Speaking of the differences in color and sunlight and other things, during my stay in Chicago I had the pleasure of attending a meeting at which was brought up the subject of dark-room lighting. The members were about equally divided as to the efficacy of the yellow, green and red lights.

One would present some very good reason why the red was insufficient, while others would be equally prejudiced against the green and the yellow, and all produced evidence of the fact that their theory was the correct one, and left things standing about where they were when they commenced the discussion.

Several gentlemen wanted to see me make some exposures on paper, so we agreed to visit the lake side and make some views of buildings, as that is about the only place in Chicago that you can make a picture on account of the smoke. "Gentlemen," I said, "I think we will have an opportunity of doing two things at once. I will show to you a photograph full of color, and at the same time show the working of the paper." There were representatives of each faction present, and I called their attention to a little building between the Leland Hotel and a new structure about to be put up. The building was a bright canary yellow, and moldings black.

"Now," I said, "there is something to photograph. What do you suppose that thing will be?" One man said that the yellow would take just as plain as the white. I told him what I thought about it, that the yellow would be just black, and the red would be the best color there was.

I developed one my own way, and the other two just as they wanted them, and in every case the red brick was full of detail, and the yellow simply black; so this proves that yellow is the best color to be used in a dark room.

[It should be mentioned here that Mr. Cooper brought with him and exhibited to several of the members a number of interesting specimens of paper negatives, some of which were designed to show how easy it was to produce cloud effects. Several lantern transparencies made from paper negatives were thrown on the screen, no appearance of grain being observed. Mr. Cooper also explained how he locally retarded development, when the high

lights were up sufficiently, by applying to them a weak solution of bromide of potassium with a brush. Continuing on the development afterwards, he was able to obtain a harmonious picture full of details in the shadow, with the high lights not too harsh.]

Mr. BEACH—The next subject for discussion will be upon "Developers and Developing Dry Plates." In a communication received from Mr. Alvey A. Adey, Second Assistant Secretary of State in the Department of State at Washington, D. C., he has sent me a formula which he says he uses with much success for making lantern slides or transparencies.

For lantern slides I use Seed's plates, coated to order on thin glass, and reduce from larger negatives in a home-made reducing camera, using a Suter 7-inch aplanat A, or a Beck autograph 5-inch focus lens. I make a simple solution of crystallized washing soda as follows:

Carbonate soda, crystals. 4 ounces.  
(437 grains to oz.)  
Water ..... 8 "

For a developer, I add to each ounce of water half a dram of the pyro solution of the Beach developer and one or two drops of

Bromide of potassium.... 50 grains.  
Water ..... 1 ounce.

In a minim glass I mix an equal quantity of the above soda solution and the potash solution of the Beach developer, and add a quarter of a dram of this mixture to each ounce of developer. The image comes up slowly and with good contrast, needing no clearing solution.

I find if a drop or two of

Citrate of soda..... 50 grains.  
Water ..... 1 ounce.

is added to the developer, a slightly brownish, creamy tint is given to the slide, making it project well on the screen.

Concerning the rapidity of the plates, he says they are marked sensitometer 21; he uses a small stop, *f*-30, in the lens. For contact printing the plates are almost too sensitive; but with the yellow light from a 1-inch flat-wick kerosene lamp turned down to about half flame, holding the plate about three feet distant, he obtains good results from a sharp, clear negative in four or five seconds' exposure.

Among other things which he writes about, is the liability of the jointed slides in English plate holders to fog the plates. He asks me to caution any of our members who own them about it. There is some deleterious material in

the leather of the joints which affects the film, fogging it.

I should add that Mr. Adey states that he has had excellent success with the Beach developer, and has sent me several specimen blue prints from negatives developed with it. I pass around a few prints for your inspection; the particulars are on the back.

Out of seven successive experiments in photographing a splash of water in a pail, caused by the falling of half a brick seven feet, he sends me one picture which is typical of the rest. You will notice it presents several curious points, and is in many respects superior in clearness to the illustrations shown not long ago by Mr. Thomas Pickering, of Boston.

I also pass around for your inspection one of the best jumping photographs I have seen. It is a stereoscopic picture, and shows the figure at full height in the air. The picture was sent to the *Scientific American* by Messrs. Ender & Tennilles, of Marianna, Fla. A shutter of their own make was employed. Observe how clear and strong every portion of the picture is.

Mr. Frederick A. Jackson, of New Haven, Conn., another of our enterprising corresponding members, has, at my request, sent me the formula of developer he has worked with much success. I have christened it "Jackson's Developer."

#### NO. 1.—PYRO SOLUTION.

Citric acid..... 48 grains.  
Sulphite of soda..... 960 "  
Water ..... 10 ounces.

Then add

Pyro..... 437 grains.  
Water to make..... 15 ounces.

And, finally,

Sulphuric acid (C. P.) ... 12 drops.

#### NO. 2.—ALKALINE SOLUTION.

Any for which the operator may have a preference. I use

Carbonate of potash..... 6 ounces.  
Carbonate of soda ..... 4 "  
(480 grains to ounce.)  
Water to make ..... 30 "

Use the clear liquid only, or filter.

For very rapid plates, use

No. 1..... 1½ drams.  
Water ..... 2 ounces.  
No. 2, a sufficiency, beginning with ..... ½ dram.  
Increasing to..... ½ ounce.

if it be required, bearing in mind that every drop added after the details are out, increases



the density rapidly. No more of No. 1 will be needed.

From the start to the finish keep the plate developing, adding No. 2 gradually. At the slightest indication of hardness, add water, from 2 to 8 ounces, according to need.

For slower plates use less No. 1, down to  $\frac{1}{2}$  dram to 2 ounces of water.

For a  $6\frac{1}{2} \times 8\frac{1}{2}$  Carbutt B, use:

No. 1 (Pyro).....	1 dram.
Water.....	4 ounces.
No. 2, sufficient to produce develop- ment, using care not to obtain too much density.	

With this developer, when properly handled, plates develop beautifully, and when finished possess a dark olive tint, printing finely. The negative appears very clear and apparently much thinner than it will prove to be when dry. Care should therefore be taken in developing not to obtain too much density.

I shall be happy to hear from any one else on this subject.

No one responding, he spoke of having been to see the first international yacht race on September 7th, on which occasion he carried with him a  $6\frac{1}{2} \times 8\frac{1}{2}$  outfit. He passed around a few prints from his negatives, and said:

To my surprise, when I came to develop the plates, I found that on the edge where the slide was pulled out there was a general fog, right up and down close to the edge, varying from one-eighth to one-fourth of an inch wide. This led me to investigate what the reason for the fogging was.

When I held the end of the holder where the slide was withdrawn towards a powerful light, shading my eyes, I could not observe any trace of a leak, still I knew there must be one. So, as an experiment, I put the holder on my camera, and then took out the lens, and held the bellows and the holder in the sunlight, and then covering my head with the focusing cloth, I drew the slide out, and as I drew it out I could see where the fault was, for as soon as the slide was drawn I could see the light very distinctly at the valve end of holder. I would suggest this method of testing your plate holders.

I had no finder on the camera, but instead of it just a little sighting screw on the front at the center of the top. Then in taking the picture I lined the screw with the center of the back of the box, and succeeded in locating the picture on the plate very well. A notch in the frame of the ground glass, when the latter was turned up over on to the top of the bellows, was the rear sight,

and was so fixed that I couldn't put the focusing cloth over the camera and keep the light out from the end of the holder, so the light came upon it pretty strong.

Mr. COOPER—What shutter did you use?

Mr. BEACH—The old fashioned Prosch shutter.

Mr. COOPER—That is the one I designed, and in my experience I find it gives the best sky effects for water or marine views.

Mr. BEACH—Mr. Rockwood has just returned from Europe, and at my request has consented to give a little talk of his trip.

Mr. ROCKWOOD—I received some very positive impressions about photographers on the other side. I found that there was a wonderful degree of conservatism. I was very much surprised to go into some of the very largest galleries in Europe, and find that they were working generally about as we did here ten or fifteen years ago. I went as far as Berlin, Munich, Dresden and Vienna, and in almost all of the establishments found the same condition of things. They do not "rush" sitters through in the style they do in our club galleries, but they grind them out in the same style, but with more deliberation. There is but little attention paid to the peculiar treatment which each face requires in portraiture. I believe that a man in making photographs should diagnose the physical forms and temperament of his clients in a measure the same as a physician; but there was a steady uniformity about everything. If a photographer's sky-light necessitated that the subject sit on the right side, the right side would be taken, irrespective of the best side to take. If it happened to be more convenient to photograph him on the left side, he was so presented.

While the pictures were mechanically excellent, there was a great want of the artistic element in the portraiture. There was no such variety as here. So much by way of criticism. In the way of landscape and composition pictures, they have proved in England that photography is something more than a mechanical art. I saw a number of pictures of Sutcliffe's—say forty or fifty—one of which were perfect gems. Any one of them could have been painted and found to be more interesting than many of the *genre* pictures hanging in our schools.

One Sunday, coming down from the Rigi, at Lucerne, I found a young English amateur at work. I asked him some questions, which made him think that I was a photographer, which I admitted. I made some suggestions

as to the selection of the view, use of stops, shutters, etc., when, said he, "Do you American professionals talk that way to the amateurs who come and ask your advice and suggestions?" I said "Yes; that I was a member of the Amateur Society; that I edited a column in the New York *Art Amateur* for the benefit of amateurs." Said he, "You would have to apply a pretty big cork-screw to get such hints from the English professionals, and you would have to fasten a guinea on the bottom of the cork." (Laughter.)

At Dresden I went to one of the principal establishments, under the name of Hanfstangl (it is, however, plain Mr. Smith), who has had in a measure the exclusive access to the pictures of the old masters in the great Art Gallery there. I was ushered into a room where the great "originals," as they called them, were. These were large photographs forty by fifty inches finished up in the most superb style, from which are taken the fine photographs which are sent here as copies of the original paintings.

The artists employed are excellent, and well preserve the spirit and drawing of the great originals.

At 10 P. M. the meeting adjourned.

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[From the *Journal of the Society of Arts.*]

## REPORT ON PHOTOGRAPHY AT THE INVENTIONS EXHIBITION.

BY W. B. BOLTON.

(Continued from page 383.)

As showing the degree of perfection to which the collodion process was brought at a very early date, attention may be directed to the instantaneous views of England and Blanchard, taken from 1855 to 1860.

Turning to printing processes we find little variety, the earlier specimens consisting almost wholly of silver prints on plain paper and a frame of prints in various metals, dating back to 1839-42. Photo-lithographic reproductions by Bullock, and examples of the photo-galvanographic and surface-block processes of Paul Pretsch, produced between 1856 and 1860, complete the record of printing processes previous to 1862. Early specimens of processes of later date are included in this collection, some of which, in their perfected forms, will be noticed—as the carbon and Woodburytype and platinotype methods. The aniline process of W. Willis, Sr., now superseded and almost forgotten, is also represented.

Amongst the miscellaneous examples of apparatus are many which are interesting from

an antiquarian and an historical point of view, no less than from the contrast they present to more modern instruments. Old daguerreotype apparatus and ancient cameras with a curious old-world look, contrast oddly with the adjacent exhibits of modern cabinet work, while the optical instruments of the past present an even more remarkable difference. Amongst these are the early specimens of the "fluid lens" of Archer, the "panoramic" lens of Sutton, which is also a water lens, *i. e.*, a lens in which the correction is secured by a combination of glass of suitable curves, inclosing water or other fluid of a different refractive power. The most interesting object in this class is, however, undoubtedly a lens constructed by Andrew Ross in 1841, which claims to be the first compound lens ever made for photographic purposes. Archer's first photographic camera and the earliest silver bath employed in his own practice are relics of merely antiquarian interest; and a curious old adjustable diaphragm of the date of 1851 shows how closely in some cases our modern apparatus follows the earliest lines. A collection of portraits of the fathers of photography is worthy of mention, and deserves to be reproduced in a more permanent form before the evanescent images have entirely disappeared.

The Photographic Society's collection forms a condensed summary of the progress of photography anterior and up to the Exhibition of 1862, from which period it will be necessary to trace the story elsewhere. At that time the collodion negative process and albumenized silver prints held full sway. The daguerreotype process had nearly disappeared and the glass positive was rapidly following the example; the "carte mania" was at its height, and the comparatively cheap carte-de-visite was surely supplanting its rivals in popularity. The greater facilities afforded by the collodion process had drawn a large number of landscape photographers into the field, both professional and amateur, the former of whom adhered almost entirely to the wet collodion process; the latter, to a great extent, preferring to replace the old waxed-paper processes by one or other of the dry preservative processes. It is matter for regret that so few specimens of the work of these processes subsequent to 1862 are on view, since results of the highest technical excellence were attainable, though at the cost of a considerable amount of trouble as compared with later methods.

In 1861, Major Russell had introduced his tannin process, in which a glass plate, prepared

with bromo-iodized collodion, was sensitized in a solution of silver nitrate in the ordinary manner, washed in order to remove all traces of the soluble silver salt, and, after treatment with a solution of tannin, finally dried, in which condition it retained its sensitiveness for a very considerable time. Later, the process was improved by the substitution of a plain bromized collodion for the bromo-iodized hitherto employed, by which means a greatly enhanced sensitiveness was gained. This substitution of bromide alone for bromo-iodide, formed the starting point from which the first step in the direction of improvement was made. The preparation of the dry plates by the bath process was tedious and occupied a considerable length of time, in consequence of the numerous washings it was necessary for the film to undergo. So far back as 1860 the attempts had been made, by Gaudin in Paris and Capt. Dixon in England, to dispense with the nitrate of silver bath by forming iodide of silver in the collodion itself, and subsequently Liesegang worked in the same direction, but all these failed in securing a sufficiently fine suspension of the particles of silver iodide, unless by the aid of such an excess of soluble iodide that the films were too insensitive for practical use.

*(To be continued.)*

### Bibliography.

LA PHOTOGRAPHIE APPLIQUÉE A L'HISTOIRE NATURELLE. Par M. Trutat. Paris: Gauthier-Villars.

In a handsome octavo volume of 225 pages, M. Trutat has given a most interesting description of the applications of photography to various departments of natural history. These embrace anthropology; mammals, birds, reptiles, fishes, and invertebrates, in the field of zoology; dry and living plants in botany; and also the general application to geology. A chapter on micrography gives a number of details about illumination and the various apparatus used in this special application of photography. Another chapter is devoted to a general description of photographic processes, while considerable space is taken up with the subject of projections. The book is illustrated with a large number of cuts and five handsome phototype plates, showing the applications treated of in its pages. To those interested in these special departments of study, we can recommend this volume as one of the best we have seen upon the application of photography to natural history.

TRAITÉ PRATIQUE DES EMAUX PHOTOGRAPHIQUES. Par Geymet. Paris: Gauthier-Villars.

Is a small octavo volume of about 160 pages, treating of the application of photography to enamels. The fact that this useful work has passed through three editions is sufficient guarantee of its value. The edition before us (the third and latest) is divided into nineteen chapters. In the first four of these the preparation of the photographic image is discussed, and a number of formulas are given. Then a number of chapters are devoted to the transfer of the picture to the enamel and its final vitrification. Chapters follow on the colors desirable for enamels; the particular classes of vitreous materials best suited to the work; on photography on porcelain; making enamel plaques; and also various modifications and developments of the processes discussed.

The book has been entirely revised in this last edition, and is filled with most useful and practical information. The descriptions of the methods used are particularly clear, and the formulas given appear to be the results of personal experiments by the author. It is a veritable practical treatise on the subject of photography on enamels.

TRAITÉ PRATIQUE DE CÉRAMIQUE PHOTOGRAPHIQUE. Epreuves irisées, or et argent. Par Geymet. Paris: Gauthier-Villars.

This is a complement of the author's volume "Traité des Emaux Photographique." It is a small octavo of 133 pages, and describes the methods of applying photographic processes to the decoration of glass and porcelain; also in the application of a method for producing iridescent pictures in gold and silver. The processes given appear very complete; a number of formulas are found in the pages; and the whole volume looks as if it was carefully written. The sections on the decoration of Limoges and Cloissons ware are interesting from the descriptions of the application of enamels that serve to fix the photographic pictures by the aid of the fire. The volume is a very useful one to those interested in the application of photography to ceramic decoration.

THE ADIRONDACKS ILLUSTRATED. By S. R. Stoddard. Glens Falls, N. Y.: Published by the author.

This is a well written guide to one of the most charming regions for the tourist and hunter in New York State. In 250 pages, Mr. Stoddard has described in a flowing, happy manner the delights of traveling in the wilderness; given an account of the natural features



of the region, with useful hints for the sportsman and tourist in fitting out for the journey and camping, together with the routes to the different places of interest; and a host of other useful information. We have known the little volume for years, and the present edition is brought fully up to the times with all the needful information for those who desire to see the Adirondack region and enjoy its delights. The very interesting style of the author, combined with his great experience in the region of which he writes, makes this book one of the best to take on a trip into the region described; and the entertaining incidents related in its pages give a delight to the general reader seldom found in such guide books. Mr. Stoddard being a photographer of well-known reputation, lends the book an additional charm to his fellow artists, who will find many interesting pieces of information in its pages.

DER LICHTDRUCK UND DIE PHOTOLITHOGRAPHIE. Von Dr. Julius Schnauss. Düsseldorf: Ed. Liesegang's Verlag.

This is the third edition of an excellent little hand-book upon photo-mechanical printing from gelatine plates, and photo-lithography. In 155 octavo pages, the author describes the various materials used: the chemicals, plates, etc. He also gives details for the preparation of the gelatine and other surfaces upon which the pictures are to be reproduced. Considerable attention is given to the kind of photographic negatives best suited to the processes under consideration. A discussion of the character of the press best suited to the work also forms an interesting section of the volume, together with the use of quick-acting steam presses. Another section treats of the retouching and varnishing of the pictures. Some consideration is also given to photo-gelatine printing in natural colors. That part of the work which treats of photo-lithography describes in detail the various methods now in use, and the applications of photography as an aid to the best results. This section of the volume appears to be fully up to date. The book is well illustrated with cuts, and four plates give some excellent examples of the application of the processes described in its pages.

### What Our Friends Would Like to Know.

Q.—G.E. sends a number of spotted prints, and writes: These prints have been treated with acetate of lead to eliminate the hyposulphite of soda. They appear all right at first,

but after a few days these white spots that you see appear all over the prints. Can you tell me what is the trouble?

A.—It appears to us that the cause of this trouble is the imperfect washing out of the lead acetate. Perhaps it would be better to use nitrate of lead. We have used this salt and it does not appear to effect the print even in pretty strong solutions, say ten grains to the ounce.

Q.—A subscriber writes: Please tell me how to get dark brown tones on ready sensitized paper. I always obtain a red tone that will not get brown in the toning bath, even after long toning.

A.—In the first place, fume the paper with thoroughly good strong ammonia for half an hour or longer. Then print deeply until the shadows are entirely indistinct and the high lights very considerably discolored. By now following the directions given with the paper you should get good dark brown tones, approaching to black according to the length of time in the toning bath and the strength of the latter.

Q.—W. B. C. writes: Will you please answer the following questions. Is O'Neil's formula for toning one that can be kept and used repeatedly with good results? What is the best formula for the iron developer? Can Voigtlander's No. 3 Euryscope lens be used with good results in the studio for portraits? Is there any way by which I can prepare a woodcut by the aid of photography?

A.—The toning bath can be used repeatedly and is better for being a little old provided it is clean. Of course gold chloride should be added to it from time to time when each new batch of prints are to be toned, and care must be taken that it be kept alkaline to litmus paper. The best formula for the iron developer is a saturated solution of ferrous sulphate made decidedly acid with sulphuric acid; a saturated solution of neutral oxalate of potassium made acid with oxalic acid; and a (twelve grains to the ounce) solution of potassium bromide. For use take three volumes of the oxalate solution and add the iron solution to it as needed, together with a few drops of the bromide, taking care not to use more than one volume of the iron solution to three volumes of the oxalate. The No. 3 Euryscope lens can probably be used for portraits in the studio without any trouble. We have never used one, but the lens is rectilinear and quite rapid, therefore there can be no objection to its use in the manner stated. To make a woodcut by photography,

you would have to prepare the wooden block in the same manner as a wet plate, that is, coat it and sensitize it ready to receive the impression. The cutting would have to be done by a regular wood engraver.

## Views Caught with the Drop Shutter.

OUR good friend I. W. Tabor, of San Francisco, Cal., gave us a call recently. He has been traveling in the Eastern States and was particularly interested in the yacht races. Mr. Tabor has promised us a characteristic California picture for an illustration to the BULLETIN at an early date.

WE notice a fine crayon portrait of Governor Hill on exhibition at Chatsey's. It is, we understand, the work of Mr. E. K. HOUGH, an artist recently from New York, and formed part of his exhibit at our fair, taking the first premium. It is a good likeness, and was favorably noticed by the Governor himself as he passed through the Art Hall.

The old Savage place, corner of Green and Gillis streets, is being rebuilt and enlarged. It has been purchased by Mr. E. K. Hough, who will occupy it in the spring. He will spend the winter in North Carolina. —*The Fredonia Advertiser.*

C. P. WALLIN has recently fitted up a new handsome studio in Montgomery, Ala. From what we can learn of Mr. Wallin and his good wife, they are thoroughly appreciated in Montgomery.

MARCUSE & CUNNINGHAM, of Montreal, are doing such a good business in art goods and photographic materials, that they are talking

of enlarging their premises before long. We wish them every success.

THERE is a man in London town and he is wondrous wise; whenever he writes the printer-man he dotteth all his i's. And when he's dotted all of them with great *sang froid* and ease, he punctuates each paragraph, and crosses all his t's. Upon one side alone he writes, and never rolls his leaves; and from the man of ink a smile, and marks "insert" receives. *And when a question he doth ask (taught wisely he has been), he doth the goodly penny stamp, for postage back, put in.*

OUR publishers have recently shown us some excellent albums for mounting and preserving photographs in. They contain twenty-four cards for mounting the pictures on, and are bound in handsome alligator covers. They are certainly the best thing of the kind we have seen recently, and are very moderate in price.

WE regret to have to note the burning of the premises of Messrs. BUCHANAN, SMEDLEY & BROMLEY, of Philadelphia, on September 20th. This disaster happened at between 12 and 1 o'clock at night, and before eleven o'clock the next morning these enterprising young merchants were in order and doing business in another location. We must commend them for their energy, and are glad to hear that they are fully insured.

THE Phoenix Plate Company have recently improved their methods of making ferrotype dry plates, and now claim that they can guarantee good results upon their new plates. From the examples we have before us these plates give nice results, and are worth trying by those making this kind of pictures.

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Negative on Stanley Dry Plate.

Photographed by J. A. FRENCH, Keene, N. H.

## GLEN ELLEN CASCADE.

# ANTHONY'S Photographic Bulletin.

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Prof. CHARLES F. CHANDLER, Ph.D., LL.D., *Editor.*

ARTHUR H. ELLIOTT, Ph.D., F.C.S., *Associate Editor.*

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OCTOBER 23, 1886.

Vol. XVII.—No. 20.

## THE NEW QUARTERS OF THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.

WE recently inspected the new rooms of this energetic society at 122 West 36th street, New York, and could not help admiring the admirable arrangements for practical work that have been provided by the society's officers. One great improvement over their old accommodations is the easy accessibility of the rooms from the street. About a dozen steps upstairs from the vestibule carries one into a neat, bright, and exceedingly conveniently arranged audience room, which is used for the meetings and lantern exhibitions. In this room are arranged a large number of comfortable arm-chairs for seating the members and their guests during the regular meetings. Around the walls are arranged various pictures, the result of the work of members of the society, and a set of boxes occupy one corner of the room to receive hats and overcoats. At the front end of this room an admirable screen is arranged to use for lantern exhibitions, and also a convenient desk for the presiding officer and the reporter. Immediately behind the screen, and separated by a glass partition, is a cosy little club room, where a dozen members can chat and read the photographic journals. This latter is neatly carpeted and furnished, and around the walls are numerous examples of the work of the members. On exhibition nights with the lantern, the cylinders and apparatus for projection are located in this last room, thus saving that amount of space in the regular audience room, a part of the glass partition being removed to allow of the projections upon the screen.

On the floor immediately over these two rooms is the practical laboratory and dark room of the society, which has been arranged with uncommon care and a full regard to the comfort and convenience of members of the society. Here we found a fine large 11 x 14 enlarging apparatus mounted in front of one of the windows; also numerous other pieces of apparatus of general utility, together with a set of cupboards or lockers in which the members can store their cameras and other pieces of apparatus when not in use. Here also we found the excellent dark room, which is a model in every form of comfort for the practical worker. This room is 20 by 10 feet in size, and has one large window 6 by 3 feet at one end, protected by a double set of sashes sliding horizontally; one set has panes of orange and green cathedral glass, between which is placed canary yellow tissue paper; the other sash has only yellow panes of glass.

With this latter illumination the room can be used for silver printing and



toning, or the development of transparencies; while with the orange and green sashes it can be used for developing dry plates, so that the illumination by daylight is excellent. Over the window there is arranged a ventilating box which obstructs the light, and at the same time admits a free circulation of air from the outside.

Placed along one side of this dark room are four large sinks, allowing six persons to operate at once, while in front, attached to the wall, is a convenient shelf, having on the under side a special rack, arranged to hold glass graduates by their feet so that they drain perfectly after washing. Located over the sinks, and in the center of the room, are in all, three special lanterns for illuminating at night. They are made of Russian iron, one foot square, the bottoms being closed with non-actinic glass, and inside are four gas jets. From the top of each lantern an ample smoke-pipe extends to the chimney, which freely conducts away the heat, while suitable apertures are arranged around the sides of the boxes to admit air, and properly shielded to prevent leakage of actinic light. On the front of each box there is arranged a small non-actinic glass window for looking at plates by transmitted light, and which can be closed when not in use, to prevent the light from falling upon the face of the operator.

The general construction of these lanterns allows of a flood of light projected downward upon the developing dish without coming into the eyes of the operator; and the color is much brighter than deep ruby red, and therefore better for examining the progress of development. A small sheet of mica is suspended under the gas lights to shield the glass from the radiant heat.

Having the air come through the ventilating box, and the lamps conducting the hot air into the chimney and away from the room, an excellent circulation is kept up, making the dark room much superior to the usual cramped, close, ill-ventilated closets used as dark rooms generally.

In addition to these conveniences, there are weights and scales, a large assortment of chemicals, stock solutions of the pyro and iron developers, magnesium light apparatus, trays, printing frames of all sizes, enlarging easels, extra cameras for the use of members, together with Dallmeyer rapid rectilinear lenses. Altogether nothing appears to have been left undone that would tend to the comfort and assistance of the members of the society.

It is the intention of the officers to fit up the other portion of the upper floor with special rooms for printing, enlarging, and possibly provide a studio with sky-light.

We know of no association in the country that offers so many inducements to the amateur photographer as the New York Society. Lately this society has engaged the services of a practical photographer, who attends every evening, to take charge of its dark room and assist beginners in development and other practical points, as well as to make prints for the members. This last feature should induce many amateurs to join the society, for the instruction they will obtain will fully repay to them the cost of their membership. It is the only society in the country that employs a stenographer regularly and publishes its proceedings, which are given gratis to its members.

Our amateur subscribers who are not already members of this society should pay a visit to the new quarters on 36th street, New York, and we are satisfied they will be delighted with the very ample arrangements for comfort and advancement that have been perfected by the officers of this well-known society.



## EDITORIAL NOTES.

WE call the attention of our readers to the interesting letter of *Secretary McMICHAEL* pertaining to the Photographers' Association of America, and shall be pleased to hear from any of them upon the same questions. It is extremely important that everything connected with this organization is carefully discussed at the present time, as there is a committee appointed to draw up a new constitution and by-laws to present to the Chicago Convention for adoption, together with the report upon incorporation. All those who are interested in the building up of our art in the United States should see that the Photographers' Association of America is kept the representative body it has always been, and that every effort is made to elevate our art through its members. Let us hear from all interested. In the next BULLETIN we intend to discuss the matter more fully than our time will now permit.

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ONE of the best lectures ever given before the Photographic Section of the American Institute, was delivered by Dr. Edward L. Wilson on October 5th. "An Arabian Night's Entertainment" embraced an exhibition of Dr. Wilson's beautiful lantern slides of the scenery of Sinai and the surrounding country; and the lecturer had the very great advantage of being able to speak of the scenes from personal acquaintance with them. The large audience that crowded the hall in every part was a most flattering testimonial to the interest taken in Dr. Wilson's discourse.

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PROFESSOR ABBÉ, of Jena, has recently invented a new kind of glass for making microscope objectives. The German government appropriated \$15,000 for experimental work in this direction, and, after five years, Professor Abbé has succeeded in making a microscope objective that surpasses anything of the kind hitherto made in the perfection of its corrections for both spherical and chromatic aberration. The lenses of the combination have various compositions, some being silicious glass, while others contain borax and phosphorus. The most marvelous revelations are expected from this instrument, as it has already given some remarkable results. There are three eye-pieces for use with this objective, two for ordinary work, and one specially fitted for photography. We shall look with interest for some of the developments from the use of this new means of investigating the minute world revealed by the microscope.

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PROFESSOR W. H. PICKERING made observations of the late solar eclipse at Grenada, on August 29th, and writes: "The eclipse passed off successfully, and we lost only 45 seconds out of the 226 through clouds. I had eighteen assistants selected from the islanders, and they all did very well. I think my results will be very satisfactory."

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WE have before us a report of the committee of the Franklin Institute on Science and the Arts, pertaining to Ives' process of orthochromatic photography. After reviewing Mr. Ives' claim to priority in publishing a process for orthochromatic photography, the report says: "We have satisfied ourselves that it is the first working practical process of photographing colors in their relative degree of light and shade as they impress the eye." The report also commends Mr. Ives for publishing the process to the world without reservation of information and

rights, and recommends the award of "The SCOTT LEGACY MEDAL AND PREMIUM" to Mr. Frederick E. Ives for his chlorophyl process of photographing colors according to their visual intensity. The report is signed by Coleman Sellars, John Sartain, Samuel Sartain, Joseph M. Wilson, John G. Bullock, W. Curtis Taylor, Frederick Graff, Charles F. Himes, and H. R. Heyl, Chairman. An appendix to the report contains the results of a number of experiments made with the process in the presence of Messrs. Graff, Wilson, and Bullock.

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### PHOTOGRAPHERS' ASSOCIATION OF AMERICA.

SECRETARY'S OFFICE, BUFFALO, N. Y.,  
September 30, 1886.

*To the Editors of the BULLETIN.*

MY DEAR SIRs,—In the *Photographic Times*, dated September 27, 1886, I notice an article by Gayton A. Douglass, of Chicago, relative to Triennial Exhibitions of the Photographic Association of America.

I am well aware that the writer has the best interests of the association at heart, but I cannot see why the association should take any steps in the matter, as it is purely a business transaction with the dealer. If they choose to come in with us every year, or every three years, is a matter for them to decide.

This is a subject where the opinions may differ widely, as some manufacturers have told me they would make an exhibit if they did not sell a dollar's worth. They said the expense was a good deal, but it was the most direct way to reach many photographers, who would not buy so many new goods if they did not see them on exhibition, and the many fine photographs showing their use.

If, as he says, it is apparent that each succeeding meeting has added to the value of this grand organization—beginning with a mere handful of earnest workers, it has grown to nearly a thousand—don't you think it would be better to let well enough alone rather than make a change which must necessarily be an experiment to a considerable extent?

I am well aware there is a great deal of expense and labor connected with each exhibition, but that is the case with everything progressive.

He also says it must be admitted that one of the greatest attractions of these conventions is the display of appliances for photographic work. Then why deprive the members in smaller cities, where the intervening educational and legislative conventions would be held, of having the advantage of seeing and studying the appliances as those living in Chicago and vicinity? We are well aware that many photographers cannot attend except when they are held near where they reside.

Suppose the next convention were to be held in some city far East, there would be comparatively few from the West, but those who might attend it would want to have all the advantages the same as those who attend the Chicago convention, besides very few dealers who exhibit in Chicago would make a display at the Eastern meeting, consequently the labor and expense would not come on the same ones for a number of years.

I think there should be many changes in the general government of the association, that it might be strengthened and productive of a greater amount of good in the future than in the past. I believe there should be a com-

plete revision of the constitution and by-laws, and the association incorporated by a committee composed of all the past and present executive officers. Then we should have a legal foundation to work upon. If, in the judgment of this committee, it would be in the best interests of the association to hold the convention at greater intervals, it could be incorporated in the constitution and by-laws, and officers elected accordingly.

At the last convention there was a resolution adopted and a committee appointed to incorporate the association under the laws of the State of Illinois. As I understand it, there must be a permanent officer in the State where it is incorporated, and our constitution does not provide for any such officer, consequently the resolution cannot be carried.

For one I should be glad of any change that would be for the best interests of the association, and make it a permanent and prosperous organization.

Very truly yours,

H. McMICHAEL.

### SOME MAGNIFICENT STUDIES OF ANIMALS.

In our issue of October 9th, we noticed that Mr. Muybridge had been taking negatives of some of the wild animals in the Philadelphia Zoo. Dr. Higgins, of this city, has, it appears, cotemporary with Mr. Muybridge, been taking negatives of the more important ones in our own collection at Central Park.

All are taken on 8 x 10 Stanley plates, with the extremely rapid exposure of only  $\frac{1}{100}$  of a second (given by a powerful spring shutter expressly made for such work), and in such close proximity that each individual animal covers as near as may be the entire surface of the plate. The vastly increased difficulty of instantaneous work on plates of such size against that with shorter focus lenses on small plates is known by every one.

The prints are remarkable for their perfection, being bold and strong; and the animals, showing not the slightest trace of motion in even the most mobile parts of their body, appear absolutely statuesque. Every hair, fold or wrinkle in the skin is clear and distinct, and sharply cut. Among those exhibited to us, embracing tigers, bears, camels, elephants, lions, etc., one of the lions, when enraged by the goading of his keepers, showing his mouth wide open, with the teeth plainly visible and the hairs encircling his head standing out sharp as needles, is to be especially noted; the very irides of the eyes showing the dilation of the pupil. The lens used was the Dallmeyer rapid rectilinear of  $12\frac{1}{2}$  inch equivalent focus stopped down; the plate, as before mentioned, the Stanley—and such achievements, we feel, add, if possible, new laurels to the reputation which they already sustain. The camera, the featherweight Fairy.

Dr. Higgins informs us that gentlemen having a permit will meet with every courtesy from Mr. Conklin, the Superintendent of the Zoological Department, who is really in love with his pets, and extends every facility to those with like interests.

### OUR ILLUSTRATION.

SOME time ago, Mr. J. A. French, of Keene, New Hampshire, sent us a number of fine views for Our Picture Gallery, and we were so delighted with one of them, that we persuaded him to lend us the negative to make an illustration for the BULLETIN. This picture was Glen Ellen Cascade, and we are pleased to be able to present our readers with a view of this pretty waterfall. It is situated upon Sturtevant Brook, about four miles north of the City of Keene. The negative was made upon a Stanley plate.



# PHOTOGRAPHERS' ASSOCIATION OF AMERICA.—TREASURER'S REPORT.

G. M. CARLISLE, *Treasurer, in account with the Photographers' Association of America.*

## RECEIPTS.

1886.		Cash on deposit as per last report.....	\$1,913 59
June 22-25.		Received from 321 new members, at \$5.....	1,605 00
		“ “ 335 “ \$2.....	670 00
		“ for 508 tickets, at 25 cents each.....	127 00
		“ from H. McMichael (Entrekin donation to medal fund)...	10 00
		“ “ Joshua Smith, balance of medal fund.....	40 65
		“ “ H. McMichael (floor space).....	1,485 35
August 22-25.		“ “ “ “.....	116 40
			<hr/> \$5,967 99

## DISBURSEMENTS.

1886.		Paid Draft No. 1, J. Landy (attending Ex. Com. meeting).....	\$39 50
January 30.		“ “ 2, H. McMichael “ “.....	70 00
February 1.		“ “ 3, W. A. Armstrong “ “.....	41 60
“ 19.		“ “ 4, D. R. Clarke “ “.....	34 50
		“ “ 5, W. H. Potter “ “.....	35 00
		“ “ 6, G. M. Carlisle “ “.....	104 30
April 9.		“ “ 7, H. McMichael, on account.....	100 00
June 23.		“ “ 8, R. Benecke, “.....	100 00
“ 24.		“ “ 9, “.....	125 00
		“ “ 10, Cyrus Morgan, reporting proceedings.....	300 00
“ 25.		“ “ 11, F. W. Suchase & Co., carpenters.....	40 15
		“ “ 12, E. & H. T. Anthony, expense on foreign exhibit..	48 66
		“ “ 13, Souder & Benecke, flowers.....	40 00
		“ “ 14, F. W. Suchase & Co., carpenters.....	16 92
		“ “ 15, C. Gentilé, railroad advertising.....	65 50
		“ “ 16, P. W. Rounds, badges.....	150 00
		“ “ 17, Joshua Smith, medal fund.....	200 00
		“ “ 18, G. M. Harding, carpenter.....	56 93
		“ “ 19, O'Neil Lumber Co., use of lumber.....	82 27
		“ “ 20, H. S. Bellsmith, com. expense.....	3 10
		“ “ 21, William Miller, police service.....	30 00
		“ “ 22, R. Benecke, on account salary.....	250 00
		“ “ 23, L. B. Pierce, rent.....	685 00
		“ “ 24, R. Benecke, labor account.....	250 00
		“ “ 25, “ to balance account.....	46 97
		“ “ 26, H. McMichael, due from 1885 account.....	10 10
September 4.		“ “ 27, “ 5 per cent. receipts.....	202 72
		“ “ 28, G. M. Carlisle, “.....	202 72
October 6.		“ “ 29, C. T. Stuart, prize essay.....	100 00
		“ for postage stamps.....	7 30
		“ exchange on ten drafts.....	2 50
		“ Express.....	2 70
		“ Stationery.....	73
			<hr/> \$3,444 17
“ 12.		Cash on deposit.....	2,523 82
			<hr/> \$5,967 99

## RECAPITULATION.

Total receipts 1886, dues.....	\$2,275 00
Public admissions, at 25 cents.....	127 00
Floor space.....	1,601 75
Mr. Entrekin's donation, medal fund.....	10 00
Balance of medal fund returned.....	40 65
Total receipts, 1886.....	\$4,054 40
Disbursements as per vouchers.....	3,444 17
Net gain, 1886.....	\$610 23
Balance on hand January 1, 1886.....	1,913 59
Cash on deposit October 12, 1886.....	<hr/> \$2,523 82

Respectfully submitted,

G. M. CARLISLE, *Treasurer P. A. of A.*

# PROFESSOR FRENCH'S DEVELOPER.

To the Editors of the BULLETIN.

I HAVE received so many letters of inquiry in regard to the developer recommended by me in your issue of September 25th, that, in default of time to answer each, I take this public way of replying.

*First.*—For the amateur, who develops but few plates in a fortnight, it is better to put up the pyro solution in half the quantity given in the formula, making two and a half ounces, and mixing fresh when more is needed. As I never use old developer, and the fresh for but one plate, I calculate the halved formula as sufficient for twenty 5 x 8 plates.

*Second.*—The pyro solution will keep good two weeks in the hottest weather; in winter a month or more. It will turn to a light sherry color, but its efficiency seems but little impaired. Being out of pyro once last August, I very foolishly took the risk, and successfully developed some important plates with a solution almost six weeks old, and of a very dark brown color. As long as it remains clear it will work well, though less strongly with age; but if muddy fire it out of the nearest window and make up a new one. The potash solution will remain good any length of time, and may be made up in any quantity.

*Third.*—By “giving a full exposure” I mean the utmost limit before producing the thinness coming from an extreme over-exposure. It may vary from two seconds in June to thirty in December, depending upon the subject, the plate, and the actinic power of the light. No rule can be given, and each must find out for himself the limit of the emulsion he uses. A plate, as all know, may be fogged in two ways, which may rather unscientifically be described as mechanical and chemical. In the first, fog comes from light falling upon the plate previous to development, either by a leaky dark room, holder or camera, or through an inordinate over-exposure; in the second, through an improper use of the accelerator in developing. For the first mishap no developer provides an adequate remedy; for the second, I am free to say that, compared with other developers, this formula and treatment diminishes most the liability to chemical fog while forcing out the image. I use the word “forcing,” but I must confess that I believe in coaxing rather than kicking the molecules into their proper place—the *suaviter in modo* rather than the *fortiter in re*. Once familiar with the characteristics of the emulsion, and knowing the exposure, you can retard or accelerate at will.

*Fourth.*—In mixing pyro solution take care to use the *purest water* obtainable.

*Fifth.*—The formula recommended was intended for plates under an ordinary exposure. For instantaneous views I have another, with a different mode of treatment, which pertains exclusively to that kind of work.

AURORA, N. Y., October 1, 1886.

E. L. FRENCH.

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## THE POSTAL PHOTOGRAPHIC CLUB.

THE album of this club containing the prints upon the subject of grotesquerie recently came to our notice through the courtesy of Mr. C. W. Canfield, the President. It contains a remarkably curious set of pictures and some capital pieces of composition in grotesque grouping. There are sixty-five prints in the album, and the majority of them are thoroughly well done. Mr. Randall Spauld-

ing contributes a print entitled "Take your choice," which consists of two rows of young girls apparently looking over a wooden fence. There are six faces in each row, and there are all possible phases of expression upon them, from frowns to beaming smiles. "Uncle Remus," by F. C. Briggs, is an excellent portrait of one of those typical Southern household servants that one meets occasionally. "Fishermen at Palatka, Florida," by Miss Salter, is an excellent composition, and quite artistic. We think it is a little out of place in an album devoted to grotesque subjects, and deserves more appropriate companions. Another view that was evidently placed in the album to fill out the pages is a lovely "View from covered bridge," by Mr. Thurston. The pictorial effect is excellent, the covered bridge in the foreground forming a kind of frame to the view in the distance, which consists of a neat country house nestled beneath the shade of a large and spreading tree. An excellent piece of really grotesque grouping is found in President Canfield's picture, entitled "Ha ! Ha ! Ha !" which consists of a collection of Japanese oddities—a mask, a curious vase, a guitar, a contorted porcelain dog, and other queer objects—making one of the most grotesque groups in the whole album. "On the brink," by Mr. Dumont, is another exhibition of the artistic taste and photographic skill of this well-known amateur photographer. This picture consists of a view of a waterfall, the beauty of which has to be seen to be appreciated. It is too full of charming bits of light and shade to allow of a detailed description. "Mrs. Jarley's Wax-works," by James, is an excellent idea, being a group of performers in this well-known species of entertainment; but the print is a poor one and almost spoils the picture. Another excellent group of grotesque objects is the work of Mr. French, the Secretary of the Club, entitled "Son-rise—Good-by old fellows." A Japanese umbrella forms the background, and a curious jug contains a Japanese doll in the act of disappearing within, while outside is found a frog, a mouse, and a rat bidding adieu to the disappearing figure. The grouping is quaint, and the picture well taken. We also note another excellent view in the album, this time by Hausmann, and the picture is quite artistic. A gipsy girl with a banjo, and her dress covered with playing-cards, is evidently intended to represent a fortune-teller. This picture is by Miss Salter. The composition is good, and the portraiture excellent, but the print is very poor. "An interior," by Roosevelt, is very good. "Flitting, May 1" is a picture of a woman in the agonies of moving her pets and household goods, the idea being the work of Miss Littlejohn, and well carried out. Mr. C. H. Beach contributes two excellent views of the "Gorge at High Rock." "Priscilla, after G. H. Boughton," by Mr. Dumont, is another of this gentleman's excellent studies. The picture consists of the head and bust of a lady against a background of dark foliage, which is vignetted out around the edges, giving a very pretty effect. The Puritan cap and kerchief around the neck give a capital light to the pretty face, and the whole picture is a most charming study. Dr. Max Müller contributes a capital picture entitled "Oui-oui," and is a view of a pig looking over a fence in quest of an ear of corn which a hand is holding towards him, the rest of the figure that belongs to the hand being vignetted out. Mr. Cabot has an excellent view of the "Interior of Library, Ticknor House, Boston." "St. Augustine Express," by Miss Littlejohn, is an excellent view of a Southern ox-team express cart such as is usually found in Florida. "No. 384—View by Hausmann" is the best photograph in the album, and exceedingly artistic. The picture consists of a scene upon some



canal. On the left is the canal-lock and keeper's house, past which curves the tow-path. On the right is a dam, with a fall of water, while rising gradually behind these objects is a mass of dark foliage, covering a slight rise of ground. The whole view is well taken, and the details in the foliage most excellently brought out. We have only space enough left to just note two more pieces of composition, "The Basket Seller" and "Listening to the Birds," by Mr. Dumont. The first of these consists of two figures, one a woman basket-peddler, as often seen along the country roads; the other figure is evidently a country housewife trying to make a bargain. The composition is excellent and the picture remarkably well caught. The second picture mentioned above has appeared in the journals, and obtained for Mr. Dumont the praise of two continents. We closed this album with a regret that we could not spare more time to note many good points in other pictures, and we are pleased with our ramble through its interesting pages.

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### OUR PICTURE GALLERY.

WE are afraid that our good friends who send us so many charming pictures will think we are ungrateful in not acknowledging them long before this. But when we recall to their minds the limited capacity of our pages, and the mass of material that came from the photographic conventions here and in England, they will pardon us for our apparent listlessness.

An excellent view of a locomotive and train of cars in motion came from Mr. G. M. Barney, of Springfield. The picture is uncommonly sharp, and was taken on a Stanley plate with a Dallmeyer lens and Prosch shutter. When we remember that Mr. Barney is an amateur of only six months' standing, we must call the result very good.

At the late outing of the Photographic Section of the American Institute, a number of pictures were taken by various members of the section. We have before us copies of those taken by Mr. O. G. Mason, the Secretary of the Section; and also a print from a negative taken by Mr. William Gray. This latter picture is excellent; but the three groups taken by Mr. Mason are some of the best pieces of photographic work we have seen for some time. One remarkable feature of these last pictures is that they were taken upon Stanley dry plates that had been in Mr. Mason's changing box a whole year before they were used. For detail, softness, and fine gradations of light and shade, these prints of the groups of the Photographic Section of the American Institute leave nothing to be desired.

From George West & Sons, the winners of the gold medal for yacht pictures at the St. Louis Exhibition of the Photographers' Association of America, we have received an excellent large view of the yacht *Irex*, as she is winning a race at Harwich, England; also a view of the *Galatea*, and another of the *Frolic* and *Veruna* together. In the latter case, they write us that their own boat was nearly swamped at the moment of exposure, the weather was so rough. It is needless for us to say that these pictures are gems of photographic art and speaking testimonials of the skill of these intrepid photographers. One of our friends recently asked us, when looking at our large view of the *Irex*, "How can they get such pictures? they must make the boat stand still," the details are so fine and every rope and spar is so sharp.

To Wilfred A. French, of Boston, we are indebted for fifty-two views of Ber-

muda, every one of which is interesting, and many are gems of charming scenery. We cannot find space to note all the beauties in this generous donation, but would mention more particularly the following as those that please us most: "Cocoa-nut Palms at Woodland," remarkable for fine detail in foliage; "Gibbs Hill Light-house," a fine picture of a high white tower against a cloudless sky; "Balance Rock, Hungry Bay," showing fine detail in the shadows; two views of the troops drilling at Prospect, which are very sharp and clear; "North Shore, near Crawl Point," which is remarkable for sharpness in both foreground and extreme distance; "Three Natives," is a happy little sketch of a darky and his boy driving a mule-cart, and is exceedingly artistic. Altogether we are delighted with these charming evidences of the thoughtfulness of our friend French.

G. L. Hurd, of Providence, R. I., sends us two very interesting views. One is a picture of the birthplace of Horace Greeley, at Amherst, N. H., and represents a low wooden house of the most humble proportions, situated at the turn of a roadway, which gives it a rather picturesque appearance. The other picture is a view of Roger Williams' Rock, at Gloucester, Mass., a spot of surpassing interest to our New England cousins. Both pictures reflect the good taste and photographic skill of Mr. Hurd, and are extremely interesting additions to our collection.

From M. A. Morehouse, of Wevertown, N. Y., we have received a number of 5 x 8 views which he desires us to criticise candidly. All the pictures are good pieces of photographic work, and exhibit much artistic taste in the selection and arrangement of the subjects. The picture entitled "They meet and talk it over," a group of ladies in a shaded roadway, is excellent, but would be improved if the light had fallen more upon the faces of the left-hand members of the group. The foliage is very fine in this picture. "The Picnic" is very good, and needs no comment from us. "Sunshine and Shadow" is a charming little bit of scenery and well caught; but the lack of detail in the shadows detracts from the beauty of the picture. The stillness of the scene is very well caught in the foliage and the water that sleeps among the rounded stones in the brook, making a picture of a peaceful and cool retreat from a burning summer's sun. "The fence across the brook" is another charming scene on a stream that the speckled trout would love; and here again a mass of black on the right of the print mars the beauty of the picture. "The Mountain Stream" is the most perfect picture of the series—a delightful combination of light and shade, not too much distance. and much detail in the foliage, all go to make an exceedingly pretty picture. A little lighter printing would make a great improvement in this view, which is quite a gem of landscape photography. In the other pictures there is fine detail in the foliage, but a lack of artistic feeling in the selection of the points of view: the pictures are therefore uninteresting, except to those who know the scenes. Altogether these views are remarkably fine pieces of photographic work, and what we have said in criticism is our candid opinion, which was asked for. Mr. Morehouse must favor us again with more of his work. All these views were made on the Stanley plate with an E. A. rapid lens, and we think that the results speak well for both.

Mr. E. J. Foote, of Virginia, contributes a very handsome panel picture, which is remarkably well caught. It is a view in a dark ravine through which leaps a water-fall forming several cascades. Groups of figures are seen perched upon the rocks, and the whole picture is an uncommonly pretty piece of scenery.

As a photograph it is remarkably good, being filled with detail in the shadows, and exhibiting some fine effects in rock-work.

There are a number of other pictures that have been contributed to our gallery, but want of space compels us to defer the notice of them until the next **BULLETIN**.

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#### PICTURES ON SOME ANCIENT DRY PLATES.

TWENTY years ago, Mr. A. F. Styles, at that time a photographer in Vermont, went to Florida for his health, taking with him some collodion plates preserved with tannin—probably the first dry plates ever used practically in this country. He took orders for pictures, sent the negatives home to Vermont for development, and the pictures were forwarded to his customers from his gallery in Burlington. He secured a monopoly of the photographic business in Florida, and for three winters did a large business. It was during the popularity of the stereoscope, and the larger part of the hundreds of negatives that he made were of that kind. The state of his health was such that he could not live at the North, and finding that the climate of Florida agreed with him, and also becoming enamored with the State and foreseeing its ultimate advancement, he sold his property in Vermont, and bought a tract of land five miles south of Jacksonville, on the opposite side of the river, and began an orange grove. He has now a splendid grove of 1,700 trees, in full bearing. When he began the grove he gave up photography entirely, and his outfit that he had used in Florida was relegated to a lumber closet for storage with a miscellaneous lot of other things, where it remained absolutely unmolested and almost forgotten for nearly seventeen years.

Last winter he was visited by an amateur photographer from the North, and after talking about photography awhile, he was prompted to resurrect his old and dust-covered apparatus. He had a thoroughly well-made changing box, with brass mountings, which was made to hold two dozen plates. It was placed over the camera, and by certain brass slides the plate was dropped into position, and after exposure, by turning the camera upside down, the plate went back into the box. Mr. Styles gave the box a shake and said he thought there were some old plates in it. He was about to open the box to find out, when the amateur suggested his putting the old outfit in order and seeing if any pictures could be made on the ancient plates. During August, Mr. Styles experimented with the plates and has succeeded in making some quite passable pictures, some of which are before us. They are really curiosities when it is considered that they were taken on plates prepared seventeen years ago. Mr. Styles had forgotten the old formula for the developer for the plates, and had to go entirely by guesswork in that respect.

One of the pictures is of Mr. Styles' house, showing the moss-covered oaks; and the other is a picture of a very handsome white flowering shrub that he has in front of his house.

We are indebted to Mr. Marcus H. Rogers for sending us these extremely interesting prints, which were printed and toned by Mr. Styles, who had not attempted any such work for twenty years. The picture of the flowering shrub is excellent, and compares well with pictures made on the dry plates manufactured to-day.



## NOTES ON EMULSION-MAKING AND PLATE-COATING.

BY W. K. BURTON.

*(Continued.)*

Unfortunately I am not practically acquainted with the centrifugal method of depositing the bromide of silver from an emulsion, and therefore cannot give an opinion of the efficiency of this method as a means of concentrating the emulsion; but from a purely theoretical point of view it looks the most perfect, if a gelatine which, when added after sensitiveness is gained, does not reduce. This gelatine can be obtained. In this connection, I think it only fair to say that I have had from my friend, W. Cobb, a sample of gelatine which is remarkable, inasmuch as it does not appear to reduce sensitiveness appreciably at whatever stage of the process it is added.

Leaving on one side the centrifugal method as one on which I am not competent to express an opinion, I come to others which require no particular appliance.

I shall first take the spontaneous precipitation method, as I am personally in part responsible for its introduction. And in connection with this, I would say at once that although I have got by its means the very best emulsion that I have ever made, and although for a considerable time I worked it with uniform success, there is some factor of uncertainty not yet explained, since the operations may be performed in apparently precisely similar manner, with the result that a very fine emulsion of splendid quality will be produced in one case, a thin, granular, useless emulsion in the other. I know several operators who have worked and do work the process with uniform success, but as I cannot do so myself I do not recommend it to others.

Another means of ridding the emulsion of excessive water is the well-known one of precipitating with alcohol. This requires no description here, but I may mention a few details in connection with it. In the first place, of course, it is of advantage for economic reasons to keep down the quantity of methylated spirit to be used as much as possible. The quantity of this needed seems to depend entirely, or almost so, on the quantity of water present in the emulsion, about two and one-half times as much methylated spirit as water being required. There is no need to add any water to the emulsion after stewing, as the bulk of the gelatine may be added dry, the solution being allowed to get cool first, and the gelatine being allowed to soak in the cool solution till it is quite soft before an attempt is made to melt it.

By keeping to the quantities of water that I give above, and by adding none after stewing, it is quite easy to manage with two pints of methylated spirit to each ounce of silver nitrate used, a quantity which is by no means enormous. I need scarcely say that methylated spirit is a substance of very uncertain constitution, and that a sample should be well tried before it is adopted for general use.

One point must not be overlooked in connection with this process, and that is, that a very thorough washing is required after precipitation. The stiffened emulsion must be broken up into *very small* pieces, and must be allowed to soak in frequent changes of water for at least twenty-four hours. It will swell considerably during this soaking, but will not take up more than one-half or one-third the amount of water that it would were it washed in the usual manner.

The washing after precipitation is very much facilitated by keeping the quantity of the gelatine very much down, adding, say, only about one-third or one-quarter of the bulk. There is of course a smaller mass to wash, and it is in a much more porous state; but then, as already stated, there is a possibility of lowering the sensitiveness by adding the remaining bulk of the gelatine afterwards, which addition is of course quite necessary.

The emulsion got by simply melting the swelled gelatine will probably be too thick for coating at a moderate temperature. It will very likely set on the plates before it has thoroughly spread, but a trial should always be made before diluting it. In any case, great care should be taken not to secure even coating by excessive raising of the temperature of the emulsion just before coating. If it will not flow at a maximum temperature of about 110 degree F., it should be diluted; the temperature should not be raised.

This matter of keeping the emulsion at such a state of concentration that it will set quickly, only just giving time to let the film spread itself evenly on the glass, with the temperature of the emulsion at from 90 to 110 degrees, is one of the very greatest importance if the highest sensitiveness is required in the plates.

I have little else to say, except that it is necessary to exert the extremest caution in the matter of additions made to the emulsion after it is complete. Thus I have known some samples of methylated spirit that would cause an enormous reduction in sensitiveness when added only to the extent of five per cent. There are others I know which do not; still it is well to be on the safe side, and to add nothing but pure alcohol, and of this not too much. Ten per cent., even of pure alcohol, is enough at times to produce an appreciable reduction in sensitiveness. Then, again, caution is necessary in the matter of adding antiseptics. In fact, I believe that in the case of emulsions of extreme sensitiveness—such, for example, as will give a strong 25, after fixing, on Warnerke's sensitometer, and will show figure 10 of sufficient density to serve as the maximum density of a negative—the safest course is to coat the plate without any addition whatever, that is if it be desired to retain the full sensitiveness.

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### DEVELOPMENT.—ANOTHER WORD FOR OXALATE.

BY JOHN CROSBY.

[Read at the English Photographic Convention at Derby.]

IN one of the photographic annuals for 1885 will be found a short article on development by the oxalate developer. In that article I ventured to state that I was surprised that the oxalate method of development was not much more in use than was the case. Since that time there is every reason to believe that many photographers have adopted oxalate with the most gratifying results. It is often said that on the Continent and in America oxalate holds full sway, whilst here in England it does not find that general favor which is accorded to pyro.

Now this could be well understood if pyro had such great advantages as to utterly cast oxalate into the shade; but, from a long experience of each, I believe that results equal in every way to those gained by pyro may be had by the use of oxalate—all things, of course, being equal. One great mistake made by those who give oxalate a trial is not making sufficiently large stock solutions of iron and oxalate of potash; then, again, sufficient care is not taken to have the oxa-

late solution give a decided red tint to litmus paper; this is most important, for it will be found almost impossible to get clear and brilliant negatives if the oxalate is not decidedly acid.

Those who have most strongly advocated the claims of pyro, say there is a greater power by its use for the correction of faults in exposure than is the case by the use of oxalate. For myself, I find quite as great latitude with oxalate as with pyro; and in cases of under-exposure I have many times in dull weather got a passable negative of a child by the addition of hypo to the oxalate developer, when I should have failed entirely with pyro. At times I have large numbers of plates to develop for amateurs, of which I do not know anything of the circumstances attending the exposures. Now, by a careful use of bromide in the case of over-exposure, or of hypo if under-exposed, I have been able to get much better results all round than I used to by pyro. I am fully aware that work of the very highest class is daily produced by the use of pyro, work some of which at times almost makes one think that the very topmost rung of the photographic ladder has been attained; nor do I for a moment wish to infer that by the use of oxalate a great advance will result all round. But what I do claim is, that work just as good will result when the worker has gained the same experience in its use as is the case with pyro.

Another very important matter, more especially to those who may suffer in any way from a weak chest or bronchial troubles, is the absence of ammonia fumes, the constant inhalation of which results in great liability to take cold. For this reason I would urge all who have not yet given the oxalate a fair trial to do so, and I certainly think they will be pleased with the results.

My method of working is as follows: Make up large stock solutions of oxalate of potassium and sulphate of iron. Most samples of oxalate will be found very alkaline. This must be corrected by the addition of oxalic acid until there is just a slight acid reaction upon the litmus paper; to every ten ounces of the iron solution add two drops of sulphuric acid. Now, when all sitters have left, develop the day's work. Make up three ounces of developer—three parts of oxalate to one part of iron solution; divide this into three parts, to one part of which add half a dram of a solution of hyposulphite (1 part hypo in 200 parts water); to the second part add one dram of a solution of bromide of potassium (8 grains bromide potassium to the ounce of water); the third part leave plain, and commence development with it.

It will soon be seen if the exposure has been right; if so, development may be finished with the plain solution; but if the picture flash out too quickly at once, pour back into the cup, and apply the one containing bromide. On the other hand, if it be found that the plate is under-exposed, the one containing hypo must be used. By these means it will be found most easy to correct any small faults of exposure. The power of the hypo in under-exposed plates will be found of great service; the negatives come up round, and any amount of vigor may be got by prolonged development.

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THE first few numbers of the BULLETIN that I have received are worth more to me than the price of a whole year's subscription. Wishing the BULLETIN every success,

Photographically yours,

H. C. TAIT.



## GELATINE EMULSIONS.

BY A. L. HENDERSON.

[Read at the English Photographic Convention at Derby.]

THE smallest departure from the usual recognized lines necessitates such an enormous amount of experimental work, that it is an impossibility that any one individual can exhaust the numerous changes in consequence of the said departure. My only regret is that photographers are so reticent and uncommunicative. If the trade had fewer so-called trade secrets, photography as an art-science would make much more rapid strides. For the last few months I have been more and more convinced of the absurdity of—plate makers more particularly—making secrets of what is common property; per example, if a person contemplates purchasing a centrifugal machine they usually bring some emulsion (which is faulty in some respects) to be put through the mill. My usual questions are, “What do you want done with it? How is it made?” Now it must be apparent that the latter question is not put with the idea of knowing any one’s particular formulas, but I work literally enough in the dark without any inclination to increase the difficulties. I have published that the length of time required to produce complete separation depends on the speed of the emulsion, also the amount of gelatine present; for any one to purposely deceive me is deceiving themselves, without throwing dust in my eyes. Yet, in spite of all this, I have only failed twice in completely restoring bad emulsion, and I believe that the faults were that the examples got light-fogged. Through this new departure, *i.e.*, using a centrifugal separator, I have gained more knowledge in six months than the whole previous years’ experiments. By the complete removal of the colloid matter and soluble salts I am enabled to examine the finely divided bromide, and then add other substances that I venture to think will still more revolutionize photography. I particularly allude to the addition of what may be called accelerators (physical or chemical) to the emulsion. If an emulsion being perfectly free from soluble matter is boiled for a time it will darken in color; the same emulsion might have been boiled as long in the presence of free bromide and nitrates without darkening. If in the former case I add some nitrate that will dissolve oxide of silver, and add some free bromide, I decolorize the emulsion, but I will not altogether eliminate fog, for this reason: the free silver (*i.e.*, I will call it free silver for argument’s sake) has acted on the colloid before the addition of the free bromide which has to play the part of reconversion, but, as I have previously stated, if both the nitrates and free bromide are present from the first, no chemical fog will result.

Some few years ago Professor Stebbing published “that a washed bromide of silver coarsely precipitated, when boiled with the addition of free bromide, a breaking up of the granules took place.” I tried this at the time without noticing this effect, but on my adding some gelatine a rapid breaking was the result, and I found that this occurred without the free bromide. It is very evident that the addition of fresh gelatine to a finished emulsion will frequently accelerate and sometimes slow it; accelerate if the gelatine is neutral, and restrain or slow if it is acid. I have discovered that a finished emulsion may be ripened considerably by keeping it liquid, and the addition of a very small quantity of pure nitrate of potassium and bromide of potassium. My reason for suggesting potassium salts is that they are less deliquescent, and no harm will come over the

plates prepared without the removal of the salts. The quantity must not be so large as to give any appearance of crystallization when the plates are dry. The larger the quantity the finer is the emulsion in density, speed, and clearness of shadows. I generally add to every ounce of gelatine, five grains of potassium nitrate and two of bromide. Here are two plates; you will see the effect, not only does the speed increase, but, strange to say, the density also; both these plates have had the same exposure under the sensitometer tablet. I calculate the speed has been increased nearly four times. I am not quite sure if my explanation is correct, but it looks as if the very partial crystallization allows more light to penetrate the film and perhaps absorb certain rays less actinic. I think this idea will open a wide field of research, namely, that crystalline matter introduced in emulsion may take the place of the various substances recommended to give orthochromatic or isochromatic effects.

Here is another curious result occasioned by the mixture of a very rapid and a slower emulsion. You will see that the plate is covered with black spots. At first I thought that some impurity had got into the emulsion, but on close examination it will be seen that where there is no exposure the black spots do not exist, showing that the black spots are silver compounds. The addition of nitrate of potassium and bromide caused a breaking up and possibly dissolving of the more sensitive particles (these particles are so fine that they have passed through a chamois-leather filter). This will explain why an emulsion is more homogeneous and better for being set and remelted. I called attention to the fact some years ago that setting and remelting several times improved the quality of emulsion, although at the time I was not sure of the reason. I see that Mr. Plener has given it as his opinion that a putrid emulsion that frilled could not be cured by the removal of the decomposed gelatine. I differ with Mr. Plener in this matter. Mr. Plener doubtless made this statement believing that frilling was produced only from decomposed gelatine. The most common cause of frilling is the subsidence of the silver bromide to the glass from slow setting. An emulsion that has become sloppy is usually coarser. I believe Mr. Plener is, to a certain extent, correct regarding the re-emulsifying of the bromide after being passed through the separator. The addition of acids to the bromide of silver will remove all the gelatine, and, in fact, will permit the bromide to be washed in alcohol, and added to vehicles other than gelatine. If the gelatine is not perfectly removed, the granules of silver bromide will harden under the alcoholic treatment, and be useless for mixing with collodion, but they soften in water again, and are easily missible in gelatine.

One word more regarding the keeping qualities of emulsion containing nitrates and bromide. The antiseptic properties of nitrate of potassium are well known to picklers of meat. I have some emulsion put away to test the keeping qualities. I am in hopes that at the next convention I may be able to show this emulsion and tell you something more of its properties.

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#### HOW TO PROVE THE SEA-SERPENT STORIES.

THE supposed sea serpent, now so often seen near Gloucester, suggests a useful field for amateur photographers. An instantaneous photograph taken at such a time would not only furnish tangible proof of the occurrence, but would possess considerable scientific value.—*Boston Transcript*.

## ON MEN'S HEADS.

BY WILLIAM ADCOCK.

[Read at the English Photographic Convention at Derby.]

IN addressing professional gentlemen who are present, I feel as a layman may be supposed to feel who pushes under the notice of a bishop saturated with Greek and Hebrew, *his* interpretation of a difficult passage; or as an ordinary medical student should feel if advising a distinguished local oculist how to treat a case of threatened blindness. In photography I am a mere amateur. Important business occupations claim me, especially in summer, as their own; and yet I am presuming to offer advice to those whose daily study is the production of portraiture of a high class, which shall meet and satisfy the demands made upon them. On these grounds I ask your forbearance and indulgent interpretation of my address to-day.

It has happened that an onlooker of a combat has seen where a defensive movement or an onslaught would at a given moment have changed the fortunes of the day. Is it possible that an onlooker of the struggle going on on all sides for more and more sitters may see a chance for some, at least, getting fame and profit by adopting his suggestions? I have an idea about men's heads which may in your opinion be worthless, but this is the foundation of it, that I should wish to purchase from some of you the thing I recommend, were I not able to supply myself with it, and I assume many others have the same desire, who are not able to take their own portraits. This paper is on "Men's Heads" only.

By what I say, do not think I am unmindful of, or underrate, the beautiful work you do. Portraiture is daily better done than formerly. It is artistic, refined, polished, and charming; but is not the almost universality of it apt to pall? Should we not value more much of this delicate and refined work if we saw some in contrast to it? For heads suitable, I am about to suggest more size, more ruggedness, more abrupt lighting, more vigor, more character; less *finesse*, less prettiness, less of the pencil—more of the lens.

Painting is many sided; why should not photography have more sides than we see? The beautiful work of the miniature painter is rivaled by the beautiful retouching, or overwork, of your artists; but the subjects of the miniature painter are chiefly women and children, not strong, massive-faced men. Again, there are artists who work with big hog's-hair tools. Who amongst you gentlemen imitate these? Who tries to do in photography what is done by the sweeping brush of Millais or Frank Holl? You take large heads—that is, you enlarge to them; but here again comes the overwork, which makes them drawings. I suggest five-inch direct heads—strongly, not delicately lighted—with every scar and wrinkle left on them. A negative a retoucher is never allowed to see; a print nought beyond a mere spotter is ever allowed to handle. Rough, rugged, demonstrative, truth-telling photography!

Tell men who have heads what pictures they would make, and show them what you can do. Have two styles of heads, a masher's and a man's. Let the former be beautiful as Rachel's enamel once was, let no egg-shell beat the skin in smoothness, let no wrinkle or marking be unobliterated; but when you get a man with character in his head, make a man of him. Make two portraits, if you like, but let one be the big, direct, untouched one. If untaken, that is, unbought, show it as a specimen. Let artists see it. Grist will come to the mill.



In saying this I am asking you to employ your best powers, your artistic taste; study old masters and imitate them; aim at grand effects of light and shadow. *For a change*, under-expose and over-develop. You will get a Spagnoletto. Who remembers the Duke of Cleveland in the Academy just closed? Was this head smooth, and polished, and wrinkleless? Indeed no; it was wondrously painted—rough, old, corrugated skin, with all those marks and discolorations which belong to advanced life. Now, am I wrong in saying an ordinary portrait, and ordinary enlargement from it, of that man's head would be smooth as the cheek of a girl, and in that respect a fiction. I have advised direct heads, and shall probably be met by the inquiry, "Why not enlarge?" Well, this is reasonable to ask, and all I can reply is, if, as a rule, one copy only would be likely to be wanted, and you can get as fine results, by all means consider the difference of cost between buying a large lens and enlarging. When I asked a well-known maker to supply to me a large lens, the facilities for enlarging effectively were not what exist to-day. I am not unmindful of what may be done on the specially prepared paper offered to us. I have seen fine things as enlargements, but I remember others, in days gone by, where the hair was thatch, and where, without over-work, the thing could not be accepted. This brings me again to the point I would insist upon. Produce them as you like, but give us five-inch heads that look pictures in themselves, that have never been retouched, and never worked upon.

I will take no more of your time, and I do not expect my words to pass unchallenged. From my point of view, and my hope that some here trace the rut I have pointed to, it is scarcely desirable they should.

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### INSTANTANEOUS PHOTOGRAPHY.

BY WILLIAM COBB.

[Read at the English Photographic Convention at Derby.]

WHATEVER may be the vocation of life in which we are engaged, it is always a source of instruction, frequently of amusement, and, it must be confessed, sometimes of regret, if we take a retrospective glance of our lives and actions; and it is doubtless a wise organization of Providence that, as we are creatures of circumstances, always longing for a change, the very longings themselves are the active agencies employed in bringing about the desired changes. This is particularly applicable, I take it, to many of us who are taking part in this, our first photographic convention—the desire for improvements. Consequently change is a mighty motive power, and it is to that we owe the gigantic and rapid strides which have been made in such a comparatively short space of time in the science whose many phases we are here met, under such favorable and distinguished auspices, to discuss.

The introduction of the modern dry plate has caused as great a revolution in its way as the railway system in the old stage-coach method of locomotion; which was in vogue when many of us were "boys, merry, merry boys, together." It has had the effect of extending the sphere of photographic application far away beyond its original limits; so much so that one is almost inclined to think that the art has become, to a certain extent, vulgarized; and perhaps it is as well that we take this view of the matter into serious consideration, and adopt all the

means in our power for raising it to a higher position and to preserve it from the clutches of degradation.

I have always regarded it as an unfortunate circumstance that it is so easy to do a little in photography; indeed no other art or science presents such extremes of capabilities. Only a very short time since I was in the company of some young gentlemen who had organized an afternoon photographic excursion. An appeal was made to another present to join them, but he declined. On being pressed, he said he intended to give it up, "for," continued he, "it's so ridiculously easy that any one can photograph. I prefer something more difficult; and which when done has more merit attaching to it." For a moment this seemed to throw a wet blanket on their ardor; but I hastened to the rescue by reminding them of the high examples of art annually adorning the walls of the Royal Academy, as well as the work of the itinerant sign-painter, who, having portrayed the king of beasts, found it necessary to write underneath for purposes of identification, "This is a lion." So also in a similar sense there are photographs and photographs, as the specimens we have just examined amply prove.

Although it is a debatable point whether or no the introduction of the gelatine process has tended to raise the artistic quality of our work, it must be conceded that results have been, and are constantly being, produced by its aid which were formerly absolutely impossible. This is a fact so patent in itself, that I need not introduce any invidious comparisons for the purpose of proving the correctness of the assertion; the marvelous rapidity which it is possible even now to produce in a gelatino-bromide plate is an element of power, when properly understood and employed. But how many thousands of instances have occurred where this very power has been so prostituted as to make it instead an element of weakness! for the higher we rise in the scale of rapidity, whether as makers of plates or users, the greater and more numerous are the attendant difficulties; indeed, it very frequently happens that plates (I am now speaking of those of extreme rapidity) are condemned as useless when the slightest variation in the mode of working would result in a totally different verdict being accorded them. And here I would venture a remark, not without a certain amount of diffidence, and, perhaps, even risk, that the younger and less experienced members of our fraternity, as a rule, seem to lack that amount of energy and determination which are the characteristics of those who are moving on to make way for them. Their standard of excellence is not raised sufficiently high. Let "Excelsior!" be their motto, for I believe that photography is destined to hold a far more important position in the future than it has even done in the past. We are warranted in entertaining this belief by what has already been achieved, and we look with confidence to those ardent and sanguine experimentalists who are constantly working in the direction of increased rapidity, for it is in that direction that we must look for a still further development of its practical usefulness.

When we shall be able by that means to bring photography forward as an unerring witness, testifying to the truth of that which we affirm, for truthful pictorial representations are ever found far more weighty arguments than mere wordy effusions; when we shall have the power to portray, not only the bright and sunny side of life with its refined social customs, but by introducing it into the courts, slums, and alleys of our great and overcrowded cities, bring it to bear upon the hidden miseries of social darkness, where the aid of the pen has been invoked—word-pictures painted pregnant with poignant truths, yet regarded as nought but

sensational emanations of fertile brains—then shall photography be employed as a mighty lever for raising the fallen, a powerful accessory for ameliorating the woes of mankind, by forcing home to conviction those painful truths which other agencies, powerful though they may be, have failed to substantiate.

There is, I believe, a grand future for photography in this particular channel; let us only have media of sufficient sensitiveness, and its practical application is sure to follow; and photography will indeed occupy an enviable position of usefulness when it shall be recognized, as it surely will be, as a reliable detector, a valuable demonstrator and popular educator, as well as a refining influence, in which light it has long been regarded.

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### DEVELOPMENT OF GELATINO-BROMIDE DRY PLATES FOR AMATEURS.

By J. S. LOPEZ, *Havana.*

NOTHING is easier of accomplishment, after a practical knowledge of any process has once been acquired, than the successful development of that knowledge; and this too without meeting with any serious impediment from those obstacles and inconveniences, to surmount which the skill of the expert has been so successfully exerted.

The majority of amateurs in photography use a certain developer, precisely as directed in the formula, without knowing anything at all concerning the actions or properties of its various ingredients; and then again, in their eagerness to make pictures, they bestow no attention whatever upon the effect of the light, and always give an exposure more or less excessive.

The process treated upon in this article, on account of its recognized advantages, and above all, on account of the extreme simplicity of its manipulations, has been the means of adding largely to the number of amateur photographers, among whom are included many scientists, who thus devote their leisure moments to interesting investigations, and who also find in the art a valuable aid in some of their scientific researches. But as the art is commonly practiced as a pastime, simply and purely, its chemical or physical foundations being generally disregarded, it shall be the object of this article to give a lesson in the development of gelatino-bromide dry plates by means of a compound of suitable substances the properties of which shall be fully explained, so that the amateur may, with a little practice, soon learn to obtain good results in these manipulations, if he will only weigh carefully everything that is set forth herein.

In the development of dry plates, a combination of alkalies and acids is used, the one acting as accelerator, that is, serving to bring out the image produced upon the film by the action of the light; the other retarding the action of the first, besides, having the property of reducing the bromide of silver on those parts of the film that have been subjected to the action of a light stronger than that which has acted upon the other parts of the film. Thus it will be seen that the first is the vehicle by means of which the second forms the deposit of precipitate on those parts of the film that have been to a greater or lesser degree acted upon by light.

From what has already been stated, it will be seen that, to properly develop dry plates, substances of the natures described should be used, and that the proportion of each should be made to agree with the duration of the exposure given to the plate. For example, an excess of the alkali would produce a rapid



appearance of the image on the film, and would cause fog; and an excess of the acid would retard the action of the developer, and result in too much intensity, the worst being that in this case the half-tones are entirely lost.

Carefully bearing in mind the foregoing practical remarks, the beginner may pass on to the consideration of the following instructions for developing dry plates.

#### FORMULA NO. I.

Sulphite of soda .....	124 parts.
Salicylic acid .....	1 part.
Pyrogallic acid .....	30 parts.
Distilled water .....	1,740 "

To prepare the above: Dissolve the granular sulphite of soda in the above quantity of boiling distilled water; next dissolve the salicylic acid in a small quantity of alcohol, and add it to the sulphite of soda solution when this latter has cooled off; after this add the pyrogallic acid. This solution may be preserved in well-corked bottles.

The base of this solution, in developing, is the pyrogallic acid ( $C_6H_6O_3$ ). It is made by heating gallic acid in a retort to a temperature of 215 degrees. The result is a peculiar white, flaky crystal, discovered by M. Pelouze. This acid is very soluble in water, and on account of its energetic reducing properties it plays the most important part in the developer; but when placed in contact with the air it is one of the most oxidizable organic agents, for which reason it is combined with the sulphite of soda ( $Na_2SO_3$ ), which is one of those salts that have only recently been introduced into photography. Sulphite of soda is made as follows: One half of a solution of carbonate of soda is saturated with sulphurous acid gas, thus forming bisulphite of sodium;\* then the other half of the soda solution is added, which renders the whole neutral. The crystallized sulphite of soda may now be obtained by evaporation. Any given quantity of sulphite of soda may be obtained from three times its volume of the solution at the normal temperature. The merits of this salt consist in its extreme cleanliness; the fact of its never imparting any yellow discoloration to the negative; and its great affinity for oxygen gas, in conjunction with which it forms sulphate of soda. This last quality renders it invaluable for preventing the oxidation of the pyrogallic acid, for which reason it is largely used in the developer. Besides what has already been said of this salt, it has the additional advantage of acting as a restraining agent in the developer, regulating the gradual appearance of the details in the image; and it also imparts an excellent printing color to the negative, that is, a color through which the sun can easily pass.

The salicylic acid ( $C_7H_6O_3$ ), which is also used in this first solution, serves merely to prevent the decomposition of the solution by the oxidation of the pyrogallic acid. This is made by dissolving phenol in its equivalent of highly concentrated caustic soda; this solution is now evaporated in an iron vessel, and the residuum is heated, being kept, meanwhile in constant motion, until a powdery and very dry product is obtained. This latter is next placed in a retort, while still hot, and the temperature is raised up to 100 degrees C. at first, and afterwards increased to 220 and 250 degrees, while a current of dry carbonic acid is introduced into the retort. Salicylate of soda is thus formed, which remains in the retort, while a quantity of phenic acid is given off. When this action ceases,

\* The formula for the bisulphite is  $NaHSO_3$ .

the substance remaining in the retort is dissolved in water and precipitated by means of hydrochloric acid.

The salicylic acid thus precipitated, on account of its being only slightly soluble in water, is afterwards purified by distillation in a current of steam heated to 170 degrees. This acid crystallizes in long, colorless, and odorless flakes. It has at first a slightly sweet taste, but afterwards acquires a sharp, biting taste. It liquefies at 159 degrees, and for its solution requires 1,000 parts cold water, 120 parts boiling water, 5 parts alcohol, or 3 parts ether. Salicylic acid has the property of preventing fermentation, both in solutions and organic matter. In very small quantities it prevents the action of the gastric juice on the caseine, and the action of the fermenting matter in beer on the glucose. It also prevents the decomposition of urea, impeding its transformation into carbonate of ammonia. A small quantity of it will prevent the fouling of barrels in which wine and malt liquors are kept. According to Mr. Kolbe, a grain of salicylic acid is sufficient to insure the preservation of twenty liters of water on board ship. According to Mr. Duggan, the fermentation or decomposition of organic substances in contact with water can be entirely prevented by using 4 parts of salicylic acid to every 10,000 parts of the solution or mixture (gelatine, starch, paste, etc.), while to obtain the same results precisely, it would be necessary to use 20 parts of phenic acid and 300 parts of methylic alcohol.

Having acquired a knowledge of the actions and properties of the ingredients of the first formula, the beginner may now go through the various manipulations with a practical knowledge of what he is about. He knows that the sulphite of soda is the regulating agent, and that, in combination with the salicylic acid, it is the restrainer, besides serving to prevent oxidation of the pyrogallic acid, which last is, in itself, the developer, because its oxidizable properties are the means of forming the precipitate on the parts of the gelatino-bromide film that have been affected by light. The first formula alone would answer for developing over-exposed plates, as the traces of carbonate of soda always to be found in the sulphite would take the place of the accelerating agent.

#### FORMULA No. 2.

Sal soda.....	124 parts.
Carbonate of potash .....	30 "
Distilled water .....	1,740 "

This formula is a mixture of two alkaline substances. The sal soda or carbonate of soda ( $\text{Na}_2\text{CO}_3$ ) is commonly called "soda" or "sal soda." The native carbonate is called "natron."

Natural sodas are those obtained by levigation from the ashes of certain marine plants, such as glass-wort, salsolas, etc. Artificial sodas are those that are made by transforming sulphate of soda into carbonate by the action of chalk and carbon. Since 1791 it has been made by the Leblanc process. Carbonate of soda is a colorless, odorless salt, and has an alkaline taste and reaction. It dissolves very freely in water, and when crystallized contains ten equivalents of the fluid, or 69.2 per cent. By the action of heat it is capable of both watery and igneous fusion.

Carbonate of potash is obtained from the ashes of vegetables which grow at a distance from the sea. The residuum, after burning, contains a large percentage of the carbonate in question, combined with certain organic acids that are separated by the action of fire, one of the products of this latter process being carbonic acid, which combines with the potash.

Thus, sorrel, which contains potassic oxalate; certain vines, which contain tartrate of the same base; nettles and pellitory, which contain potassic nitrate, all these, upon being burnt up, produce ashes which contain a large proportion of the various salts mentioned. In the laboratory a very pure article is obtained by calcining cream of tartar, or crude tartar obtained from wine barrels, in iron crucibles. It is usually mixed with two parts of potassic nitrate and, after being calcined, the residuum in the crucible is what is called *white flux*. To obtain potassic carbonate, this residuum is dissolved in water and allowed to evaporate until it crystallizes.

It will thus be seen that the action of this second solution is purely accelerative, because its ingredients are alkaline substances, such as were referred to in the first part of this article. It is best not to use too much of these substances in making up this formula, and to use this solution very sparingly in development; because, while it is true that this solution is used to work out detail, it is also true that when the developer is made too strong, the transparency in the shadows and half-tints is lost in the resulting negative, and in most cases the plate will turn out badly fogged.

When both of these formulas have been made up, it is advisable to filter the solutions, using for this purpose white filtering-paper; after this the solutions may be preserved in bottles properly stoppered and labeled. In developing, equal parts of the solutions of both formulas may be used, adding double the volume of water. In beginning development, in this case it is advisable to have near at hand a solution composed of

Bromide of potassium.....	10 parts.
Water .....	100 “

This solution is used in cases where the image appears too rapidly, a few drops being added to the developing solution. If, on the contrary, the image should prove tardy in appearing, it is necessary to add more of the No. 2 solution to bring out the details. It has been found in practice to be very difficult and risky, except for persons of considerable experience, to develop dry plates with any of the so-called “ready-prepared” developers, which are made by mixing together the accelerating and retarding solutions; because, by reason of these two solutions being already mixed, it becomes impossible to adapt the proportions used of each to suit the duration of the exposure given to the plate; and besides, the action of these developers cannot be moderated, as a general thing. Beginners lose many plates by using these ready-prepared developers, which they might save by adopting some other method of development.

Before developing, it is advisable to wash the plate under the tap, and, in summer, to soak it for a few minutes in a two per cent. solution of alum. The first is to prevent streaks or stains, which are sometimes caused by the developer not covering the entire plate, and the second is to prevent softening of the film and frilling.

It is a good plan, in developing, to use the solutions separately in two different trays. After the plate has been washed under the tap, it is placed in the No. 1 solution, which may be called the developer; after remaining in this solution for eight or ten seconds, it may be removed and placed in the No. 2, which may be termed the accelerator.

By changing the plate from one to the other of these two solutions, as the progress of the development requires, the most perfect negatives may be obtained,



and the operator is enabled to make any kind of a negative that he may desire according to the object for which it may be intended; and in following this course there is not the slightest danger of fogging the plate.

Careful attention to the instructions given below, and a little practice, will enable any one to obtain any desired results.

Always bear in mind that the developing solution (No. 1) will give any desired degree of intensity, and that the accelerating solution (No. 2) will bring out the finest details. Thus, a plate that has been correctly timed in exposure, when placed into the No. 1 solution will appear to undergo no change whatever, but after a few seconds' immersion in the No. 2 solution, the image will begin to appear, and the development is continued by changing the plate from one solution to the other as required. Care should be taken to examine the effect of these solutions from time to time, by holding the plate up to the ruby light, in order to properly work out all the detail and also to get the desired amount of intensity. An excessive use of either solution is also to be avoided, as this will produce "fog" on one hand, and loss of detail on the other. An under-exposed plate will require to be left in the No. 2 solution for a greater length of time than is necessary when the plate has been properly exposed. The image on an over-exposed plate may be brought out by the No. 1 solution, and in this case the plate may be fully developed with little or no use of the No. 2 solution. In many cases when the plate shows a tendency to fog, and particularly when this circumstance is due to excessive exposure, it is advisable to use the No. 1 solution as sparingly as possible, and to endeavor to work out all the detail with the No. 2, avoiding density as far as possible. The plate can, with far greater safety, be intensified after fixing.

The development of gelatino-bromide dry plates consists simply in what has been said in this article, and, having mastered the instructions given herein, the amateur may, with a little practice in manipulation, feel sure of obtaining good results.

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### MY CYANIN EXPERIMENTS WITH GELATINE EMULSION.

BY V. SCHUMANN.

(Continued.)

MUCH more useful than for loosening the gelatine film, the ammonia proves to be for increasing the sensitiveness. The ammoniacal cyanin bath will *only* give plates high total sensitiveness, upon which the red and yellow rays of the prismatic spectrum act more powerfully than the blue and violet ones. I have added to my bath from a few drops to ten per cent. of ammonia, and tested how much they could stand in coloring matter and alcohol, while still preserving a pure surface. The formulas already given are the results of my own observations.\*

*The development of the plate.*—As I have already remarked, the development of the cyanin colored gelatine emulsion requires particular care. The plate

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\* Besides this, I have tried the sensitizing of the plate with cyanin in different ways. I have bathed immediately after chilling; sensitized it in alcoholic cyanin solution and fumed with ammonia while still in a moist state; flowed the dry film with a solution of cyanin in absolute alcohol and ammonia, in the same way that collodion is flowed; colored the liquid emulsion with pure cyanin solution, and have then added to the latter a good deal of ammonia; fumed such plates, after drying, in a wet and dry state with ammonia, then bathed again in water and very little ammonia, and exposed them not only dry, but many times in a moist condition; but have never found that one or the other of these manipulations acted approachingly as sensitizing as the ammoniacal cyanin bath upon the dry bromide of silver gelatine.

may be without any defect and still give an entirely useless negative in the developer, even if the utmost care is taken.

I have used, almost without exception, the potash developer\* of Dr. Stolze, modified by Dr. Eder, for spectral negatives as well as for views of colored objects. The iron developer did not afford me sufficient advantages.

The development of a cyanin plate should never be commenced with a strong developer. If the picture appears quickly, it is sure to fog. In the beginning only a few drops of both solutions should be used, a little bromide of potassium being always added. In less than fifty seconds a trace of the image will seldom appear.

Should the development stop and the picture still be incomplete, or not sufficiently intense, then some more developer might be added gradually in equal parts. If the coating shows signs of fog, a little bromide of potassium may also be necessary. The plate should be put into the developer with a quick motion; light should be avoided; and, during the first stage of development, the tray should be covered with an opaque plate. For this purpose I use a piece of dark green glass. After the developer has acted from a minute to a minute and a half, the negative may be examined without fear. There is no danger of fogging after this.

The sensitometric plates I developed in a somewhat different manner, as long as the sensitive conditions showed no very great difference. I developed after the ticking of a metronome, set at sixty ticks per minute. I poured the developer over the plate and placed the tray at once into a small closet, made specially for the purpose, rocking the latter as usual, and excluding all light from the plate until a certain time had elapsed. With the last tick I took the plate from the tray and washed quickly.

This process is subjected to two conditions: the developer must be fully concentrated from the beginning, and no gradual additions are to be made, and all examinations of the image during its formation must be avoided. But both of these conditions are only admissible when the strength and time of action has been determined by preliminary experiments.

The original average composition of my developer was:

Solution A.....	6 drops.
“ B.....	6 “
Bromide of potassium solution (1 to 10).....	1 drop.
Water.....	60 c.c.

Two to three minutes after developing the plate—and later still with low sensitiveness—an addition of pyro and potassium was generally required. I have very seldom taken more than sixteen drops, this quantity alone requiring particular care.

If the plates should be very sensitive, several drops of bromide of potassium should be used. They must then be developed for some minutes, and the inactive developer be replaced by a fresh one, but without the addition of the bromide.

\* I give here the formula, as published by Dr. Eder in the *Photographische Correspondenz* for January, 1885.

A.	
Neutral sulphite of soda.....	25 grams.
Concentrated sulphuric acid.....	8 drops or $\frac{1}{2}$ c.c.
Pyrogallal acid.....	8 grams.
Water.....	100 c.c.
B.	
Carbonate of potash.....	92 grams.
Neutral sulphite of soda.....	25 “
Water.....	200 c.c.

It is also recommended to begin with a few drops, to suit the energy to the negative, until the appearance of the last details.

The washing of the plate between the first and second bath I omit. Part of the bromide of potassium will then adhere to the plate when transferred to the fresh bath, and to the latter being distributed through the whole film, I am of the opinion that I have to ascribe the clear action of the second bath. The limit for exposing the cyanin plates is considerable. I prefer to rather over-expose a little, and to be quite sure of obtaining an uncolored plate, particularly in regard to spectrum photographs, in which case I even double the time of exposure.

The potassium developer has a weak point, having a tendency to give the plates a yellowish tone in the shadows if the development is continuously forced. Fresh solutions and weaker baths will not do this. I consider this circumstance if a thoroughly faultless negative is required. As little as I like this yellowish coloration, I have not been able to discover any other disadvantage than that of the not very pleasant appearance of the gelatine film. A saturated alum bath will clear the plate considerably; this being also necessary for the removal of the blue coloration, and giving the gelatine film more power of resistance. I would like to recommend this for every developed cyanin plate. That alum has sometimes a strengthening power is well known.

A solution of hyposulphite of soda in water (1 to 4) is used for fixing. I have not observed any influence of the cyanin bath upon the duration of fixing.

*The proofs for testing the sensitiveness of the plates.*—I executed my cyanin experiments during the months of October, November and December of last year. During that time I had to renounce the sun almost entirely, and therefore had to have recourse to artificial light, using the spark and tube-light in the beginning. I afterwards worked with the more suitable and cheaper kerosene lamp, and have tested with it most of my plates sensitometrically as well as spectrographically. Siemens' normal lamp (amyl acetate flame) I could not apply. It did not give a strong enough light, and then I would have met with great obstruction by uneven exposure of the slit opening of the spectrograph.

I exposed the plates in my quartz spectrograph to the petroleum spectrum\* which was produced by a double quartz prism of 60 degrees refracting angle, and two quartz lenses of 740 m.m., focus D.

(To be continued.)

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\* If the flame is placed directly in front of the slit in taking the petroleum spectrum, an even lighting in the latter will seldom take place. The color band becomes mostly more effective on the upper edge than on the lower. The cause of this lies in the nature of the flame-cone, which at some distance from the wick reaches its greatest illumination, and decreases visibly in strength of light from this point to the top. With the aid of the following arrangement, I have removed these differences of light as far as the slit illumination is concerned; at least they could not be traced any more photographically. A very wide, but low, petroleum vessel carries a Cosmos burner of 7 lines. Its lamp cylinder is surrounded by a close fitting brass tube resting upon the upper edge of the burner. A number of small openings at the lower end of this permits free circulation of air and protects from overheating. In the tube are three other openings: a large rectangular one for the circulation of air near the flame; a round one, 6 m.m. in diameter, which permits the exit of the rays at suitable height towards the spectrograph; and a small one to judge the height of flame by. The lamp at a distance of 420 m.m. from the slit, was so placed that the collimator axis went through the middle of the flame and the 6 m.m. opening. Between the lamp and slit was the condenser belonging to the spectrograph, consisting of a bi-convex and a plano-convex cylinder lens of quartz, cut at right angles to the optical axis. The cylinder axis of both form together a right angle; the foci are 80 and 160 m.m.

A common stand, with movable ratchet on the upper part, contains two revolving prism carriers, upon which are the two cylindric lenses. The focusing of the latter requires particular care. The picture of the small circle of light of the tube opening is changed by the condenser into a strip of light of a few millimeters in width and 25 m.m. in length. If everything is in order, the slit opening appears as the middle line of this strip, and the spectrum is equally clear at both edges.

The flame reaches a constant height after having burned for about ten minutes, and then gives a very even illumination. Fresh wicks should burn for a longer time before the flame is used, as the power of light will deviate before the wick gets slightly carbonized and its white color changed to black. Turning the lamp cylinder is also necessary from time to time, causing the light to pass through a fresh part of its surrounding tube. After from two to three hours a circular spot of bluish-green color will form opposite the 6 m.m. tube opening, which, although very thin, may obstruct the passage of the rays.



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*E. & H. T. ANTHONY & CO., Publishers.*

## THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.

FIRST FALL LANTERN EXHIBITION, SEPTEMBER 10, 1886.

THE first fall lantern exhibition, comprising slides contributed by the Pittsburgh Amateur Photographic Society, the Cincinnati Club, and members of this Society, was held at the society's meeting-room, 122 West 36th street, on Wednesday evening, September 29th, and was very largely attended by members, their friends, and many ladies.

Mr. Richard H. Lawrence, Secretary of the Lantern Slide Committee, assisted by Mr. H. M. Grisdale, manipulated the lantern, and Mr. Beach announced the subjects, making comments on the peculiar characteristics shown in some of the slides as they were projected on the screen.

The lantern worked very smoothly, and the pictures appeared wonderfully brilliant on the paper screen as viewed by the audience on the opposite side.

The meeting was called to order at 8.20. President BEACH in the chair. In the absence of Secretary Granger, the President appointed Mr. L. D. Mapes Secretary *pro tem*.

Mr. BEACH announced the next regular meeting for October 12th, and further stated there would be a special entertainment held on the evening of November 18th at Association Hall, corner 23d street and Fourth avenue, for the purpose of raising additional funds for the treasury; that one gentleman had consented to furnish the hall without expense, and another had engaged Mr. Burdett, the well-known humorist, to speak. There would also be a fine lantern exhibition, comprising some of the best amateur work, and members were earnestly requested to submit some of their choicest pictures to the President, in order that special slides might be made for the occasion. An admission fee is to be charged, and members were to be advised in due time when the tickets would be ready.

The Secretary *pro tem*. read a synopsis of the minutes of the meeting of September 14th, which was adopted.

The President then remarked that he had received a letter from Thomas Plener, of Vienna, Austria, well known as the inventor of the method of separating the bromide salts from gelatine emulsion by centrifugal force. Before reading it, he stated that he had read some statements recently made by Mr. Plener concerning the crystallization of particles of bromide of silver in emulsions after they had been spread on plates, the said crystallization having a metallic appearance, and this fact Mr. Beach thought might account for the peculiar metallic silver luster often seen on the film of gelatine plates when observed by reflected light. In other words, the metallic appearance might be due to the crystallization of the bromide of silver in the emulsion.

He had asked several manufacturers to explain this phenomenon, but no one had yet accounted for it. In general it had been thought to arise from the prolonged contact of the separating mat with the edge of the film, helped on by moisture or dampness, drawing out some deleterious material from the mat on to the plate.

He had asked Mr. Plener if he thought the dampness or mat had anything to do with it. The letter given below will explain itself.

[Letter from Thomas Plener.]

III HAUPTSTRASSE N. 58, THIERS 22,  
WIEN, September 7, 1886.

F. C. BEACH, Esq.

DEAR SIR,—Yours of 24th of August is to hand. I am sorry I can give no positive answer to your queries before I have seen the plates in question. What I am going to say, pray

consider as a supposition and not as a positive explanation upon my part.

I presume that the defect you met with is a kind of border fog. If you make a cut in the film of your plate, and let it stand for some weeks in a dry place, you will probably see the same fog appear on both sides of the cutting. In such a case the fog would have the character of border fog, and could not be ascribed to the moisture, or to the effect of contact with the paper mat, etc.

As regards one of the causes of this phenomenon, I would venture to say that it might be due to the combination of silver nitrate with gelatine during the mixing of the former with bromide of potassium or ammonium.

Very likely the plates in question were made with a boiled emulsion, and the temperature in mixing was too high. Please examine your plate from the back; if you see the same silvering as on the right side (at least wherever the reduction in the plate was strong), then, on detaching the film from the plate, you will be able to take away the silvering by applying mercury to it. Should such removal occur, we may conclude that it consists of crystals of silver which have amalgamated with the mercury.

Perhaps it might be possible too to take away in the same way the silvering from the right side of the film. It is worth trying.

I cannot venture an explanation of how these crystals of silver might be produced.

Awaiting your kind reply,

I remain, Dear Sir,

Yours very respectfully,

T. PLENER.

The *President* then spoke of the advantage members would have in being able to consult a practical photographer. Mr. M. A. Clark was present every week-day evening at the rooms ready to assist members in the development of plates, and give information on other branches of photography. In order that the experiment might be tried without expense to the society, Mr. Henry V. Parsell and Mr. C. Volney King had each kindly donated \$25—\$50 in all—as a guarantee fund for the photographer's salary. So far, the amount of work sent in by members was more than sufficient to pay his salary, and there was every prospect that his engagement would be a permanent success.

Mr. M. P. Warner, of Holyoke, Mass., sent to the society half a dozen beautiful 10x12 phototype pictures of views near Holyoke. The exquisite detail noticeable in these views,

combined with the perfection of the printing, made them somewhat resemble platinotype prints. A distant view from Sugar-loaf Mountain was a fine piece of work, having natural delicate cloud effects and great depth of focus in the distance.

The lights were lowered and the exhibition took place, occupying about three-quarters of an hour's time; altogether 106 slides were shown.

Among those from the Pittsburg society which were especially liked and applauded were "Bradock's Creek, Cumberland, Pa.," by T. K. Gray, "Saw-mill Run, Pa.," by J. H. Hunter, "Cantilever Bridge on Connequensing Creek," "Cucumber Falls," "Stone Bridge, Sewickly," all in Pennsylvania, by G. A. Hays. The cantilever-bridge view was particularly fine.

A very suggestive and comical picture, entitled, "Oh my! how I do feel!" made by Mr. George S. Orth, elicited considerable laughter. It represented a row-boat filled with a complement of ladies and their beaux; the water had become too unsettled for the poor ladies, and we see one leaning over the side of the boat, having her head supported by the hand of her lover. At this moment she utters the expression given above, "Oh my! how I do feel!" The expression on the faces and the positions of the different members of the party made it, as a whole, a very amusing picture.

Another picture, entitled, "Old Auntie," an old darky, was followed by one showing two little girls, and entitled, "Two of a kind." As a joke, some wanted to know if the two of a kind referred to the darky. There were several views along the Wissahickon in winter, by Mr. Orth, some of which were very much enjoyed.

A view of a "Game of Base-ball," being made by President Murray with a detective camera, was remarkably good, showing all the players in action. It had been taken from a great elevation, and afforded a splendid plan view of the whole field.

"On the Youghiogheny River," by Mr. Murray, contained some excellent effects; also "An American Farmer and Family" was good. "Street Scene," and "Harper Ferry Specimens," "Down the Potomac," "Snow and Sunshine," "Shenandoah River," by Mr. W. S. Bell, were very much liked.

A few new slides contributed by the Cincinnati Club were next shown. Among those that were specially good should be mentioned "A Shady Drive, near Oakland, Cal.," by A. D. Smith; "Clear Creek Canon, Colorado," and

"Alligators at Old Spanish Fort near New Orleans," by L. W. Petittidier.

Nearly thirty slides presented to the society by Mr. Edward P. Gray, of San Francisco, Cal., were next shown, several of them illustrating very vividly some of the mountainous scenery to be found in California. Those which attracted most favor were, "Emerald Bay, Lake Tahoe," "Foot-bridge over Feather River," "Residence of Mrs. Mark Hopkins," "Steps of Corridor, Santa Barbara Mission Building," two very good views of the great "Lick Observatory, Mt. Hamilton," "Snow Sheds at Soda Spring Station, 7,075 feet elevation, on the Central Pacific Railroad," "Canon on the American River," "Seal Rocks, Golden Gate," and "Fisher-man's Race, San Francisco Bay."

Mr. Richard H. Lawrence had a few composition pictures, one entitled "The Pet Hen" being especially good, representing two little girls standing in a yard, one of them holding her pet bantam hen, in such a way as if she felt proud of it.

The exhibition was brought to a close by a very good interior view contributed by Mr. H. C. Runkle.

Many members, with their friends, who had not before visited the new quarters, examined the novel lighting arrangements in the dark room with much interest, and commented favorably upon the attractive and tasteful appearance of the society's meeting and club-rooms.

Altogether the exhibition was quite a success, and the very large quota of ladies present added much to promote an agreeable social feeling among the members.

Before dismissing the audience, the *President* remarked that some of the slides which had been shown would form part of those to be sent to England in October, in exchange for slides to be sent here by the London Camera Club.

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## PHOTOGRAPHIC SECTION OF THE AMERICAN INSTITUTE.

REGULAR MEETING, OCTOBER 5, 1886.

The *President*, Mr. H. J. NEWTON, in the chair.

The *Secretary* announced the receipt of the *Photographic Eye*, *BULLETIN*, and *Times*, also a work entitled "The Magic Lantern," by Prof. L. H. Laudy, presented to the section by the author. The *Secretary* apologized for not mentioning the receipt of the *Photographic Times* for several months past, by saying that

although it had been regularly received by the Institute, it had not been placed among the papers and letters directed to the Section.

The Chairman of the Executive Committee announced that the lecture of the evening would be given by Dr. E. L. Wilson, entitled "An Arabian Night's Entertainment," and on the evening of November 2d, Mr. Abraham Bogardus would entertain the section with "Forty Years Behind the Camera." Also a paper would be read by Mr. Charles Ehrmann, entitled "The Photographic School at Chautauqua."

Mr. Ehrmann was now introduced to the audience, and distributed some examples of pictures on ferrotype dry plates; or, as called by the maker, argentic dry plates. In a few words he explained their advantages, and called the attention of both amateur and professional photographers to note their superiority over any of the older and slower ferrotype processes.

At the close of Mr. Ehrmann's explanatory remarks, the Chairman in a few deserved eulogistic words introduced Dr. Wilson, who for nearly two hours entertained an audience of ladies and gentlemen limited only by the capacity of the hall.

Both the lecture and the illustrations showed the result of many months of earnest, energetic labor; and what had taken years to acquire was concentrated into a single discourse. The marked attention and frequent applause of the crowded assembly demonstrated Dr. Wilson's magnetic force in carrying his entire audience with him while recounting the scenes of the Orient. Not only did he win the applause of the scientist and scholar, but the Bible student and all true lovers of the sublime and beautiful in art.

Want of space forbids even the enumeration of the noted places spoken of and illustrated by the lecturer—places where the most imposing events of history have taken place; where the school of Israel was established, and that theocracy upon which our own code of morals is based. Perhaps no part of the world offers a more unique tour than the peninsula of Sinai and Arabia Petræa; if, therefore, one has not the deep purse and robust health to ramble over these classic lands, he may, at least, catch glimpses of this portion of the world by attending lectures like this we have so briefly noticed. Some credit is no doubt due for the unequalled success of the entertainment to Dr. Laudy and Mr. Beseler, who had charge of the stereopticon, and exhibited the scenes or illustrations with a skill only equaled by the maker of



the instrument combined with a teacher and author of the history and uses of the magic lantern.

The Chairman at the close of the lecture made some comments respecting Dr. Wilson's charming and truthful illustrations—illustrations, he said, which photography alone could furnish; and remind us of our indebtedness to the art—an art by the aid of which the traveler could put on record, and review at his leisure, the most enchanting scenes of his pilgrimage—not alone for his individual pleasure, but for the pleasure of those who have neither the means nor the opportunity of seeing the wonders of the world abroad.

At the close of the Chairman's remarks, a unanimous vote of thanks was tendered to Dr. Wilson for his highly entertaining and instructive lecture, and the section then on motion adjourned to the first Tuesday evening in November.

### THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.

A STATED meeting of the Society was held Wednesday evening, October 6, 1886, with *Vice-President* JOHN G. BULLOCK in the chair.

The Committee on Membership reported the election of Mr. Edward T. Bradway as an active member.

The Executive Committee reported that the presentation pictures for 1886 were ready for distribution after the meeting.

Mr. JOHN SARTAIN, in charge of the Art Department of the American Exhibition, soon to be held in London, called attention to the enterprise, and invited contributions of photographs for exhibition.

The paper announced for the evening was read by Mr. W. H. RAU, relating his experience with gelatine films abroad and at home. [See next BULLETIN.]

Mr. WALMSLEY referring to Mr. RAU's remarks in his paper stated that in his experience he had found the long drying of the rubber solution not at all necessary, five or ten minutes being ample.

Mr. J. M. WILSON had made over 200 exposures on films during the past summer. He used Eastman's solution for stripping, and found five minutes' drying to be sufficient.

Mr. Wilson generally oils his negatives instead of stripping the films. He has found the stripping paper more sensitive than the ordinary negative paper, and thought probably more care was exercised in its manufacture.

Mr. BELL stated that for slightly under-timed plates he used, with good success, a modification of the ferrocyanide developer given by Mr. Henderson in the *British Journal Almanac* for 1880, page 201. Mr. Henderson made the developer up in a single solution, whose action was not always satisfactory. Mr. Bell preferred to make two stock solutions, as follows:

#### A.

Pyro .....	1 ounce.
Sulphuric acid.....	1 dram.
Water.....	6 ounces.

#### B.

Ferrocyanide of potassium	4 ounces.
Carbonate of soda .....	240 grains.
Sulphite of soda.....	240 "
Water.....	32 ounces.

For use, mix one dram of the pyro solution with four ounces of the alkaline solution. This developer, Mr. Bell had found, did not stain the fingers.

Mr. BARTLETT failed to see the value of sulphuric acid alone in the pyro solution. It might prevent the growth of organic germs attendant upon decomposition, but in development could act as a restrainer only. In connection with sulphite of soda, however, he could easily understand its action. By combining with the soda of the sulphite, and forming sulphate of soda, it liberated the sulphurous acid, which, having a great affinity for oxygen, prevented the absorption of the same by the pyro, and preserved it from decomposition.

Mr. CARBUTT and Mr. BELL had found other acids to answer the purpose.

Mr. BARTLETT communicated a modification of his method of making lantern transparencies upon gelatine plates.

Instead of intensifying the slide after the fixing in the hypo, he found that much better results and a more pleasing tone could be secured by developing with either oxalate or pyro until the detail was fully out, removing the slide before it gained intensity in the developer, and immediately placing it in a solution of chloride of mercury (not necessarily saturated), where it is allowed to remain until the image almost or entirely disappears. After a thorough washing from the mercury, it is placed at once in the ordinary hypo solution, where it fixes with great rapidity, the image returning with much vigor and clearness.

To the question whether such slides would be permanent, Mr. Carbutt remarked that he

had employed a similar process many years ago in making transparencies with wet collodion, but at present had none of these slides in his possession. He also spoke of the rapidity with which slides could be made by this intensification before fixing.

A question in the box read as follows: "After a negative has once been dried, will a subsequent washing remove hypo that was not eliminated in the first washing?"

"The querist being desirous of intensifying a negative which he is not sure has had sufficient washing, is informed by a professional photographer that no amount of washing will remove the hypo left in a film that has once been dried. If this is so, is there any method of procedure to attain the desired result?"

Mr. BELL suggested the use of a weak solution of hydrochloric acid before the second washing.

Mr. BEMENT had frequently rewashed plates in which in some cases the hypo was present to such a degree that they were moist to the touch, and was satisfied that the second washing entirely eliminated the hypo.

Mr. JOHN BULLOCK expressed surprise that Labarague's solution was not more frequently used for eliminating hypo from both prints and negatives. He had used it for several years with complete success, in the proportion of  $\frac{1}{2}$  oz. to the gallon of water. If used too strong it would soften, and even remove the film; but as given above it was perfectly safe, and greatly reduced the time necessary for washing.

Mr. CARBUTT showed some beautiful transparencies, made on plates he is now preparing, in which the emulsion is supported on fine ground glass. The smooth side of the glass is coated, and in mounting for the window the transparency is simply covered with a piece of plain glass, which may be made from a useless negative, the extra piece of ground glass not being necessary. Made in this way, the cost of the transparency is greatly reduced, and the picture can be seen from the proper side, which ordinarily is not the case.

Mr. DODGE showed some good 5 x 8 pictures made by himself, and also some by Mr. Frederick Berwick, a California amateur, which were taken on home-made plates with a home-made camera.

The Wells & Hope Co. presented the society with a framed callotype picture, made from an 18 x 22 negative by Mr. C. H. James, representing Mr. G. W. Child's summer residence. It is a fine specimen of work by this process,

and a vote of thanks was tendered the Company for their generous gift.

The thanks of the society were also voted to Mr. James Monaghan, for the presentation of two 14 x 17 photographs, made by him on Carbutt's special plates with a Zeutmayer lens. One was an interior of the Church of St. Agatha, and the other showed the new City Hall Tower, and both were remarkable for their fine quality.

Adjourned.

ROBERT S. REDFIELD,

*Secretary.*

## What Our Friends Would Like to Know.

Q.—A Constant Reader writes: I use the ferrous oxalate developer. I make a saturated solution of ferrous sulphate and add about 8 drops of pure sulphuric acid to the pint of solution. This gives a bright green fluid, which remains so until after two or three weeks. Then a light flocky deposit of a pale yellow color begins to form. The developer seems to work well even now, but I would like to prevent the formation of this yellow mud. Can you help me?

A.—Your trouble appears to be the formation of basic ferric sulphate, or basic persulphate of iron, as it is sometimes called. In order to prevent this, you must use more sulphuric acid to the iron solution, say half a dram to the pint, and take care that the bottle is kept properly corked.

Q.—C. A. C. writes: In your opinion what is the best color for the walls of an operating room; I am just pulling down the plastering of mine and would like your advice as to color of same?

A.—We should advise the use of some light shade of slate color. This will prevent any reflections except those from the screens used to throw the desired lights upon the sitter, and give a soft diffused light around the whole studio.

Q.—G. T. S. writes: Will you kindly tell me, through the columns of the BULLETIN, the causes of the stains on the prints I send you. Those on No. 1 did not show until after the prints were mounted, while those on No. 2 came out immediately the prints were put in the toning bath. In the case of No. 1 all the prints cut from the same sheet of paper were stained, but prints cut from another sheet, and toned in the same bath, were perfect. In each case the prints were carefully washed

before and after each operation. It is a new experience with me, and I want to get at the bottom of it to prevent a recurrence if possible. No. 1 was printed and toned a week before No. 2, and a similar period elapsed between the purchase of the two lots of silvered paper.

A.—These stains appear to us to be caused by hyposulphite of soda. Perhaps some of this salt got into the water in which you soaked your prints before toning. Are you sure your bath was perfectly clean? A most minute quantity of hypo will cause this trouble, and then it will not appear until after the prints are mounted and kept for some time.

## Views Caught with the Drop Shutter.

REQUESTS from one or two photographers to photograph the President have been refused, says a Saranac Inn letter in the New York Sunday *Tribune*. There is of course considerable danger from amateurs in the art who have been more numerous in the region this year than heretofore. In 1884, when Mr. Cleveland was a candidate for the Presidency, he spent several weeks on the Upper Saranac. At the hotel was a gentleman (Mr. Steele) from Hartford, who was an enthusiast in amateur photography. He was very anxious to get a picture of the Democratic standard bearer, and watched for several days, but found no opportunity. At length, noticing that Mr. Cleveland usually went out from the boat-house with his guide about a certain hour in the morning, he arranged his camera to rake

the doorway, yet be almost unseen, and holding the tube, stood prominently in the foreground himself. Soon Mr. Cleveland wandered out, and greeted the supposed idler with "Hello, what have you got there?"

"A rather curious little instrument, governor; wouldn't you like to see it work?"

The future President assented, and even before he did so his picture had been taken. Mr. Cleveland was not at all displeased, and a good photograph of him in boating costume with his guide in the background was the result.—*Hartford Evening Post*.

MR. W. C. RUSSELL, of Baltimore, kindly sends us an invitation to be present at the inaugural of the Baltimore Camera Club. We are glad to note that the Club is organized to increase the interest in our beautiful art and assist its progress. We send most hearty greetings from the BULLETIN, and regret that we cannot be present.

THE Providence Amateur Photographic Association sent us an invitation to their third Annual Exhibition, held at the Rooms of the Providence Art Club. We wish them every success and regret that we could not be present to look at the results of their labors. We shall be glad to receive an account of the pictures and their exhibitors.

THE Pyro Club, of Norwich, Conn., held its third annual meeting recently and elected the following officers: M. A. Barber, *President*; Charles B. Chapman, *Vice-President*; W. H. Burnett, *Secretary*; W. C. Weldon, *Treasurer*; and Tyler J. Howard, *Librarian*. The Club is in a flourishing condition and has done much to stimulate the ambition of amateur artists in the City of Norwich.

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NEGATIVE ON  
STANLEY PLATE  
WITH  
DALLMEYER LENS.

❖ Prize Picture ❖  
ST. LOUIS CONVENTION, 1886  
BY  
G. M. ELTON, PALMYRA, N. Y.

PRINTED ON THE  
N. P. A. PENSE  
ALBUMEN PAPER

# ANTHONY'S Photographic Bulletin.

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Prof. CHARLES F. CHANDLER, Ph.D., LL.D., *Editor.*

ARTHUR H. ELLIOTT, Ph.D., F.C.S., *Associate Editor.*

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NOVEMBER 13, 1886.

Vol. XVII.—No. 21.

## THE PHOTOGRAPHERS' ASSOCIATION OF AMERICA AND ITS FUTURE.

A GREAT deal of discussion is now going on in regard to the management of this national association of the photographers of America, and we think it will be well to look at the matter from a little different point of view than that taken by many of those who are now engaged in endeavoring to present various phases of the question.

In the first place the association is primarily for the improvement of the science and art of photography.

Now, what will best promote the improvement of the science and art of photography amongst the body of men who are united under the name of the Photographers' Association of America?

The first consideration should be that each and every member should be encouraged to exhibit evidences of his skill in the art. He should enter into competition with his fellow members, not with the assurance that he is their peer, but in a true spirit of emulation, leaving the judgment of his skill with those whom the majority of the members constitute as judges over the work of all.

In the next place those members who are gifted with the faculty of communicating ideas by words or in writing, should be encouraged to present those ideas before the members in convention.

Members who have invented some new pieces of apparatus, some new method of procedure, that is an improvement in the science or art of photography, should also be encouraged to exhibit the invention or process to their associates.

All these things, it appears to us, tend to the advancement of our art, and should be encouraged in every possible way. And it will be observed that we include in these statements three classes of persons—practical photographers, photographic writers or speakers, and photographic inventors. Now to our minds they should all be eligible for membership to the Photographers' Association of America. On the question of the eligibility of practical photographers there can be no doubt, and the same is also true as to photographic writers; but in the case of inventors we are met with the objection that these men are usually manufacturers and merchants, and desire to advertise their wares. This is perfectly true, but the officers of the association should be so surrounded by the constitution that any monopolizing of the time of the association for this purpose could be preperemptorily stopped. To inventors the art owes too much to be



able to afford to ignore anything new that they may present. We think that any fear that the inventors or manufacturers are going to get hold of the association to use it as an advertising medium, is without foundation. It is too much to their interests, from financial considerations, to stand in the way of the progress of the art; they would simply be killing the goose that lays them golden eggs. No fear but that the inventors and manufacturers will stand by the photographers and do all they can to encourage them.

Originally the association chose its officers from photographers only; but lately they have admitted manufacturers and their representatives. We see no special objection to this if the men are worthy and do not use their offices for personal gain. Every effort should be made to so surround the officers with safeguards in the constitution that they may not be tempted to err. No honest man is ashamed to adhere to strict rules when he is placed in a position of honor by his fellow men, and these rules are a shield to him in time of need.

Having discussed the question of the kind of members needed in the association, let us now look at the question of encouraging them to do their duty as members and assist in the advancement of the art.

Although any one directly or indirectly interested in the advancement of photography might become a member of the association, yet some kind of honor should be conferred upon those who take active part in the conventions and exhibitions. What we propose for this purpose is the awarding of a diploma or certificate of fellowship to those who exhibit pictures for five years. These yearly exhibits should receive certificates of merit to be awarded by a board of judges each year, in order to avoid the exhibition of mere trash, and five such certificates should admit a member to the rank of Fellow of the Photographers' Association of America. We would admit to fellowship at once all members who now hold medals as awards for their photographic skill, and these members should constitute a committee of judges, from whom five judges of awards of merit could be selected by the whole committee. By this course of procedure, to be a Fellow of the Association would be an honor worth working for, and the certificate of fellowship would give the possessor of it a standing with the public at large, similar to that of the pharmacist and doctor of medicine. Perhaps some neat, simple badge might be given with the certificate, to be worn by those members who prefer it. The awarding of certificates of merit might be made retroactive, and all those who have exhibited five times in the past could be elected Fellows.

This fellowship of the association should not interfere with the awarding of medals; but as soon as a member obtains a medal he should at once be admitted to fellowship. Furthermore all the officers of the association, except the Executive Committee, should be elected from the Fellows of the association; the Executive Committee, should be so constituted that it represents the whole association, and not any particular section of its members.

In regard to those members who contribute papers and other communications to the meetings of the association, we think that cash prizes, with certificates of their award, is probably the best system of encouragement; but at least two prizes (say 100 and 50 dollars each) should be open for competition. And no papers should be allowed to be read at the conventions that have not previously been submitted to a section of the Executive Committee purposely appointed for their examination. In this way much valuable time would be saved

at the meetings, and our journals would not feel obliged to print so many pages of nonsense.

While speaking of the papers read before the association, we cannot help thinking that the system adopted by the English Convention is a good one; that is, have the meetings for the reading of papers take place in the evening. In this way the annoyance of having members going in and out during the proceedings, would in a great measure be overcome. If necessary, extra afternoon meetings could be held to get through business; but we would entirely abolish the morning sessions, and allow the members free access to the exhibition halls at that time.

We now come to what appears to be a rather difficult question to decide. How often should the conventions be held? Our first idea upon this question is that if the association cannot collect enough material to hold a convention once in twelve months, it has no cause for existence. That it has hitherto found enough to interest its members in convention goes without saying, and that the future will surpass the former efforts, any one who knows what is being done in the photographic world will readily admit. Who then objects to the yearly convention? On looking around we note that the objections come from the manufacturers, who find it a rather expensive piece of work to be taxed 800 to 1,000 dollars each year to make an exhibition of their apparatus. Would it not be better for these men to exhibit only those things that are new, or have been improved during the twelve months preceding the time of holding the convention? In this way a large amount of expense would be saved to them, and the association would not find it necessary to secure a large exhibition hall for apparatus. It could be distributed through the halls containing the pictures, and then side by side might be seen the apparatus and the results obtained by its use. This again would take more members into the exhibition halls; and, furthermore, the public could be admitted to see the whole at a nominal fee during the whole time that the association is in session. By an arrangement of this kind, everything new in photographic art could be on exhibition every year. To encourage manufacturers to show the magnitude of the industries that serve to supply the artists with materials to use, we think that a grand exhibition every two years would be often enough, in which each manufacturer could do his best to show his skill and that of his employees.

Another most important reform that is necessary to the welfare, if not the life of the association, is the better regulation of the exhibitions of pictures. It is a disgrace to all of us that thoughtless, unscrupulous manufacturers of dry plates should be allowed to use the halls of the exhibition as gigantic advertising spaces for their wares. Would it not be better to have a neat official card, to be attached to each exhibit, or even each frame, upon which could be placed all the necessary information as to how the pictures were made? Have this card small (say 4 x 6 inches), and compel every exhibitor to fill it out before his pictures are hung. And no other card (except exhibitor's name and address) of any description should be allowed to be placed on the exhibition walls. This would give every dry plate maker, every agent and manufacturer of lenses, every paper manufacturer, the same chance to exhibit the results of using his particular commodity; and would give a tone to the exhibition halls that would attract people of good taste to see the pictures.

We do not think it would be wise to make the exhibitions free to the public;

but they should be open every day and evening during the entire session of the convention, and a small charge (say twenty-five cents) be made for admission. Above all things they should be thoroughly and properly advertised in the local papers at least a week before the association meets.

We have given the above as our contribution to the discussion of the important questions that are being raised in view of the reorganization and incorporation of the Photographers' Association of America. We don't wish our readers to believe that these are the best suggestions that can be made by any means, but they are ours; and we feel it our duty to the photographers of this country to give them as an independent contribution to a very important discussion. We shall now be glad to hear what our readers think of them.

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#### EDITORIAL NOTES.

IN a recent letter to us from Victor Schumann, of Leipzig, we regret to note that a continuation of his throat troubles has caused him to again stop his interesting researches upon spectrum photography. Nevertheless, with true scientific enthusiasm, he is taking advantage of the pause in his work to have his apparatus perfected and elaborated. He has now under construction a compression mercury pump to experiment with the spectrum of hydrogen, under pressure; and also a Ruhmkorf induction coil that will give sparks 50 cm. long. He also writes that he has a Rowland concave diffraction grating with 14,438 lines to the centimeter, with which he has been studying the Fraunhofer lines  $D_1$   $D_2$  and is delighted with his results, especially the splitting of the  $D_2$  into two lines. These researches are extremely interesting, and we cannot help admiring the patient and painstaking care of this enthusiastic student of spectrum photography.

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AT a recent meeting of the New York Academy of Medicine, Dr. W. G. Thompson read a paper upon the movements of the heart and intestines, which was illustrated by instantaneous photographs taken while the organs were in action. We noted some time ago the highly interesting work of Dr. Thompson, and there is no doubt that the continuation of these remarkable experiments will lead to a better understanding of the functions of the various organs of the body. At present the results obtained are of more interest to the physician than to the world at large.

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M. CH. ZENGER recently called attention, in the French Academy of Sciences, to some interesting facts about bodies that emit light in darkness after having been exposed to sunlight. He remarked that Mont Blanc emits a peculiar blue-green light until half-past ten in the evening, and believes that the origin of the light is in the glaciers as well as in the lime of the rocks. By using a plate of phosphorescent paint in a camera, instead of a photographic dry plate, and exposing it to the view, then placing the exposed plate in contact with an ordinary photographic dry plate in the dark for one hour, he obtained a good photograph of the view focused upon the phosphorescent plate. We all know the use of the phosphorescent tablet in the sensitometer, and some time ago we thought that some modification of this method might be used to duplicate negatives readily, but we have not yet had time to try it. These experiments of Ch. Zenger are a step in this direction, and will most probably lead to some extremely useful results.



IN a recent number of the *Photographische Mittheilungen* we note an admirable portrait taken by H. Haberlandt, of Berlin, by the aid of the magnesium light. We must confess that this is not to be distinguished from a portrait taken in sunlight. Dr. Vogel gave us an interesting account of the method of procedure in one of his recent letters from Berlin to the BULLETIN. It appears to us that owing to the reduction in the price of magnesium, this method of lighting should find many useful applications in photography that formerly were out of the question owing to its cost.

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THE Providence Amateur Photographic Association, which recently held its third annual exhibition, attracted considerable attention. The exhibition contained about five hundred prints, contributed by nearly all the members, and showed considerable advance over the results of the last exhibition. The work is very uniform in all the pictures. There are few of surpassing excellence, but many with fine technical effects. The exhibition appeared to be thoroughly enjoyed by all who saw it.

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PHOTOGRAPHIC "Mosaics" is well under way for 1887, and we have been favored with a few advance sheets. It is needless to say that it will be interesting to every photographer, both professional and amateur. Dr. Wilson has given a retrospect of the year's work which is highly interesting and profitable reading. There are, as usual, a large number of contributors and the usual variety of subjects. Altogether the volume will be indispensable to every one interested in photography, and it costs so little that there are few who can afford to be without it.

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THE review of pictures, under the head of "Our Picture Gallery," is crowded out of the present issue of the BULLETIN, and will appear in the next number.

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WE have recently seen an 18 x 22 portrait of a lady, made by Dana, of New York, that is one of the most beautiful pieces of photographic work we have ever looked upon. The remarkable detail in the drapery was the admiration of all who saw it, the heavy fur trimming upon the cloak and muff being a perfect counterpart of the original, so exquisitely was every detail brought out, and so beautiful the tone of the print. In fact the whole picture was a work of art, and reflects much credit upon the skill of Mr. Dana, and his admirable use of Stanley plates.

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## PHOTOGRAPHY IN GERMANY.

BY DR. H. W. VOGEL.

*New Methods of Auxiliary Exposure—Black Margins in Gelatine Plates—  
The Scientific Photographic Exhibition in Berlin—Moonlight Pictures—  
Landscapes taken at Dusk.*

THERE is nothing new under the sun. The older American photographers will undoubtedly remember that there was a good deal of talk about auxiliary exposure in the year 1877. A certain Mr. Gützlaff asserted that he could reduce the time of exposure to one-half, even to one-quarter, by directing yellow light through a specially prepared glass plate upon the under-exposed plate. It created a good deal of turmoil at that time. Some had good results, others had not.

It was laid aside, to reappear again in 1878. A certain Scotellari traveled from town to town, showing a process of after-exposure, in which he re-exposed the under-exposed plate through a violet glass. I tried this process, but laid it aside, the results being too uncertain. When the highly sensitive gelatine plate was introduced, these experiments with extra-exposure ceased almost entirely, but lately I heard about it again from England. It seems that there also they have obtained no satisfactory results.

A very zealous experimentalist, Captain Himly, has now again interested himself in the process. But he does not take yellow, red or violet glasses, but exposes the plate, while it is exposed and in the camera, to a side light without any particular coloration. He fixes a number of holes in the front board of the camera, but to prevent the light from falling directly through these holes upon the plate, he places a piece of blackened tin in front of them at a distance of  $\frac{1}{2}$  inch, the tin not being as wide as the front board of the camera. In this way a little diffused light passes around the tin, slightly illuminating the camera as well as the plate. It is a fact, that even with gelatine plates good results are obtained with this over-exposure by Captain Himly, and without any fog. The plates have been shown in the "*Verein zur Förderung der Photographie*," and their advantage was generally recognized. A portrait plate gave an under-exposed picture with three seconds, but with auxiliary exposure in the above mentioned manner a completely exposed negative was obtained. The effect of course is greater with collodion plates. Two negatives upon collodion (from chromos) were quite surprising—all four evenly exposed, two with and two without auxiliary exposure. Here the auxiliary exposure has produced an effect as if the negatives had been exposed four times as long. About further trials with this interesting process I shall report to you at some later time.

The question was lately raised again in our "*Verein*" about the origin of the black edges of the plates, which appear so often during developing, and how they can be avoided. I believe I see the cause of this in not thoroughly wiping off the edges of the plates after cleaning them. If a large-sized prepared plate is cut into smaller pieces, as is oftentimes done, the black coloration will only show on the outside edges, but not where the fresh cut is. Mr. Gädicke, on the contrary, remarks that the same black coloration will also show on the newly-cut edges after the plates have been kept for some time. This seems to show that the cause is to be looked for in the packing, although no actual reason could be given whether it was caused by the wrapping paper or in some other way. Now I have made the observation that with colored plates (the orthochromatic) the black edges will appear much quicker than with ordinary plates. Lately I brought an old azalin plate to light, and to my great surprise observed that the edge was more intensely colored than the middle, although it was not thicker, but much thinner, than the middle. I cannot explain this circumstance otherwise than that the component parts of the gelatine film, which even in its dry condition contains sufficient moisture, may move, and that soluble substances collect on the outer edge. Every gelatine emulsion contains some decomposition products, which form during cooking. If these move gradually towards the edges in the finished plate, it is no wonder that they, on account of their greater quantity, will have more reducing action than on the middle, and thus cause the decomposition of the bromide of silver, which appears as a black edge.

During the last week of September we had the opportunity of seeing a photo-

graphic exhibition which attracted general interest. It formed part of an exhibition that took place under the auspices of the Scientific Convention which met here, and contained a great many new things seldom seen. Objects were exhibited that had not been placed on exhibition before in Germany, England, America, Russia, Austria, Hungary, and even our neighbors beyond the Vosges Mountains were represented by objects of the first order. Above all was the astronomical photography, which here celebrated its triumphs. We will draw attention only to the magnificent solar pictures of Dr. O. Lohse; the mammoth picture of Venus, by Todd, taken in the Lick Observatory in California; the celebrated Pleiades nebulae, discovered by the aid of photography; the planet views of Henry (Paris); the excellent star spectra of Pickering (Boston); the spectral views of Hasselberg (Pulkowa) and E. Von Gothard (Hereny), who exhibited also some interesting planet views; and to Professor Eder's spectral studies on optical sensitizers, etc.

Prof. Pickering deserves credit here for his wonderful spectra of Sirius and Arcturus, both of nearly two inches length, and for his star charts, in which the stars have recorded their own spectrum, obtained in the most simple way by placing a prism in front of the telescope. It was highly interesting to be able to compare in this manner the different spectra. Pickering also exhibited the plate on which he obtained the Pleiades nebulae by photography like the Henry Brothers. Adjoining this were also exhibited Henry's views. Just as interesting also were Henry's views of Saturn with his ring, and Jupiter; also his excellent star pictures taken photographically.

With regard to the solar spectrum, Allen Rowland, of Baltimore, was ahead of all. A spectrum in twelve bands, which together was thirty-six feet long, taken with a concave grating, had not yet been in existence. It extends to near D, an achievement of the new color-sensitive processes which demonstrated clearly in this exhibition in the most convincing manner their incalculable benefit to science. There were also views of butterflies and bugs taken on color-sensitive plates, also landscapes by the same process. Obernetter had some exhibits here that spoke more convincingly than words. Here we have a new field, whose cultivation belongs to the future. Indeed whoever has not seen a landscape taken with the ordinary plate and another taken with a color-sensitive plate, has no idea of the enormous difference in them.

Portrait photography is also represented at the exhibition in the attempts to take pictures by artificial light with color-sensitive plates, inaugurating here a new field for photography. Haberlandt with his magnesium pictures, and Obernetter with his groups by lamp-light may be mentioned. Very honorably represented also was the instantaneous photography of Anschütz, who, like Muybridge, has drawn into the circle of his experiments runners, athletes, wolves, dogs, deer, cats, etc. As mentioned by me before, Anschütz first takes, with Voigtlander objectives, very small and direct views of about one inch. These he afterwards enlarges six times.

Highly interesting views of lightning by Dr. Kayser were also to be seen; also the Polar light by Professor Tromholt (Christiania). One field, however, still ranks above all, that is, photo-micrography, represented by Professor Fritsch, who exhibited a magnificent tableau to explain the organization of the electric fishes. As a matter of course the microbes and bacillae of our celebrated countryman Koch, the discoverer of the cholera-bacillus, were not wanting. One



curiosity I have yet to mention, those are the balloon views. These have lately given such excellent results, that actually real maps have thus been obtained, and from the different views taken a map of the city of Berlin might easily be made. Moonlight views and views taken at dusk after sunset were also not wanting. My son has made several successful attempts in this direction. He made on the 16th of September, three days after full moon, in the park of the Technical High School, several moonlight views, using for the purpose a Voigtlander landscape Euryscope and a Bush stereo apparatus, but without stops. Bernaert and highly sensitive Gädicke plates were used. Of the four views, the first case, Bernaert plate with Euryscope, exposure from 9.45 to 10.15, was pretty well under-exposed. In the second case, Gädicke plate and Euryscope, exposed two hours, the houses were good, the foliage still a little under-exposed. The third case (Bernaert plate with stereo apparatus), exposed 40 minutes, was correctly taken. Gädicke's plate, exposed for one hour, was considerably over-exposed, the tones appearing much too light in the positive. An over-exposed plate in moonlight, that is certainly something new, and many may not believe it.

Less conspicuous appear the results obtained at dusk. A house in the same park served as an object, and the lens used was a Voigtlander Euryscope No. 4, with next to smallest stop, and a Sach's plate. My son exposed at 6.15 (about half an hour after sunset) 90 seconds, and obtained a picture in which the building was perfectly delineated and only the foliage seemed to be under-exposed. Judging from the character of the plate, double the time of exposure would have given a fully exposed picture. One second would have been sufficient at noon of the same day. This would show that the light is 180 times weaker at dusk than at noon. Another similar attempt on the following day at about the same time, but with 150 seconds' time of exposure, gave no better picture than with 90 seconds on the previous day. One reason for this may be that the atmosphere on the second day was very heavy and dark.

BERLIN, September 30th.

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## AN AMATEUR'S EXPERIENCE PHOTOGRAPHING IN THE ROCKY MOUNTAINS.

BY RANDALL SPAULDING.

[Read before the Society of Amateur Photographers of New York, October 12, 1886.]

THREE years had passed since I had climbed a real mountain, *i.e.*, one rising to a height of 12,000 feet or more. This mountain-climbing is to me the most enchanting and inspiring recreation that I have ever enjoyed—a ruling passion that must be satisfied at not too long intervals.

I therefore persuaded three friends, one from Montclair, one from Newark, and one from East Orange, to accompany me. One of the party carried a small camera,  $3\frac{1}{4} \times 4\frac{1}{4}$ , a convenient size, as we supposed, for taking lantern slides; two others carried each a  $5 \times 8$  camera, one furnished with a rapid rectilinear Dallmeyer and a Dallmeyer wide angle, the other with a 6-inch Morrison wide angle and a 10-inch Morrison instantaneous wide angle.

We took advantage, in getting reduced rates, of the meeting of the National Teachers' Association, at Topeka, Kansas. A party was made up that left New York July 8th, in the car Lincoln, and stopped over a whole day at Niagara. A number of plates were exposed on the Falls and Rapids, some of which, especi-

ally the smallest ones, yielded very good negatives on being developed afterward in Colorado. We found that one needs at Niagara at least one whole day for prospecting in order to find the proper points of view and best times for exposure. I may remark here that many of the views of Niagara sold there, and here in New York, are so intensely brilliant in their cloud effects as to seem to me quite outlandish and absurd.

After stopping one day in Chicago to see some of its wickedness, we found ourselves July 12th in Topeka. The whole region was parched with drought and the heat was intense. Poor quarters were assigned to us. The Convention opened Tuesday evening. Receiving on Wednesday morning from two lady friends from our county, an invitation to spend a day and night with their brother in Wilson, Ellsworth County, with whom they had come out to pass the summer, we voted the Convention a humbug, and pushed on by the noon train on the Kansas Pacific into central Kansas.

In Wilson the thermometer was said to stand during the afternoon at 118 degrees. Somewhat late in the afternoon I observed that in the coolest part of my friend's dining-room it stood at 102. Yet we rode out 8 or 10 miles to the ranch and took a shot at as fine a herd of cattle as I have seen, except perhaps in Estes Park.

The morning of July 16th found us drawing swiftly up the high plain of western Kansas and eastern Colorado, and finally entering Denver. We were so thoroughly exhausted by the journey across the plains in the intense heat, that we were glad to push on immediately to Gold Hill, Boulder County, where my sister is residing for the present and has a good frame house that was large enough to accommodate all four of us.

Gold Hill lies upon the foot hills of the Colorado front range, or Snowy Range as it is called, at an altitude of 8,000 feet. At Boulder City we entered the little narrow-gauge car, and after the hot and dusty ride through Kansas it was with the most delightful sensations that we were drawn through the rugged precipices of Boulder Cañon and Four Mile Creek, up a grade of 210 feet to the mile, to the little village of Salina.

It was a three-mile climb by the stage road up to Gold Hill. We decided to walk. Not being as yet accustomed to the altitude, we gasped and panted, and thought it the longest three miles that we had ever traveled. I have often thought of the contrast between our experience in this afternoon walk, and that six weeks later, when we marched briskly up this same road at 9 o'clock at night after we had already had a severe tramp and climb of 13 miles, carrying at the same time our photographic outfits. One does get used to a thing, and the free mountain air of Colorado works wonders in improving the physical health.

After disposing of our baggage and resting a few days, we set out for a somewhat extended tour through the mountains to the south. Being obliged to spend a night in Denver, we decided, in our rough condition, to patronize a second-class hotel. Two of the party had no sleep that night. It was a scene of woe. One of my friends sat nearly the whole night in a chair tipped back upon its hind legs, and with his head resting upon a pillow that he had crammed into the wash-bowl. For some unaccountable reason the writer slept well and arose in the morning refreshed and apparently unbidden—and yet he neither smokes nor chews, nor is given to strong drink.

Our first trip was by a branch of the Union Pacific Railroad through Clear

Creek Cañon to Graymont, the present terminus of the road and the starting point for Gray's Peak. On the whole, the cliffs of Clear Creek seem to me more lofty and precipitous than those of any other that we passed through. The route lies through Idaho Springs and Georgetown, the chief town of the silver region on the eastern side of the range. The shaft houses and huge dumps of the silver mines that are thickly set along the valleys, and are seen high up on the face of almost perpendicular cliffs, lend to this trip constant variety and interest. Above Georgetown is the famous "loup," in which the railway sweeps around a long circuit and crosses its own track upon a bridge 75 feet in height.

After resting an hour or two at Graymont, we took our photographic outfits and blankets, which we had strapped together in a gunny sack and checked from Denver, and started toward Gray's Peak. A three-mile walk upon a cart road brought us to Stevens' mine, 11,000 feet in height and a little above timber line. Most of the miners chanced to be absent in Georgetown on a sort of strike. It is to be hoped they did not drink or gamble while there. The glory of Georgetown, as we were gravely informed by the miners, has departed; for now since the law against gambling is more strictly enforced than formerly, much of this business has been transferred to Denver.

We had plenty of room to bunk over the cook-house. In these mountain heights one has no fear of vermin. They seek the more hospitable climate of the valleys. The Chinese cook too was very obliging.

Before daylight the next morning two of the party were seized with nausea and vomiting, due no doubt to loss of sleep in Denver, and more especially to the exertion of the day before at so high an altitude.

The same effect was again produced subsequently by over-exertion at high altitudes. The youngest man of the party and myself however were ready promptly at 5.30 to start for the Peak. The pony trail that led to the summit was all that could be desired, yet to us the ascent was slow and slightly painful, as we were not as yet inured to the extreme thinness of the air. At length we stood upon the summit, 14,441 feet above the sea level. Northward, westward, and southward from this peak the snow-capped mountains present much the appearance of ocean billows, stretching far away, as they do, for at least a hundred miles before they meet the horizon. We succeeded in carrying the small camera to the summit and made two or three tolerably good views.

In our descent we met our sick companions toiling slowly up the trail. I could not but admire their pluck. They reached the top and were back at the mine somewhat late in the afternoon.

I must allude to the abundant flora in the fields that lie at the base of Gray's Peak and between timber line and the limit of vegetation. Although the species were different, yet so many of the genera that we are familiar with in our own vicinity could be recognized here, that these flowers seemed like old friends dressed in a new and more brilliant suit.

Like all Alpine flowers, they possessed an intensity of color that would delight the heart of an amateur if he could transfer it to his plate.

We secured on this trip some fine pictures of mines and of snow-capped peaks rising from evergreen forests.

Returning to Denver, we spent the following day in visiting the Grant smelter, the largest establishment of the kind, I believe, in the country, and in preparing for a longer trip in the mountains.



Leaving Denver on the morning of July 27th by the Midland branch of the Union Pacific, we followed the cañon of the South Platte up to the green pastures of South Park. The road reaches its extreme elevation, 11,500 feet, a few miles beyond the limit of the Park, at Boreas, a little station in Fremont's Pass. We had decided, at a venture, to stop over for the night at Breckinridge, and the choice proved to be a most fortunate one. We found here a village of two or three thousand inhabitants, surrounded by snow-capped peaks and evergreen forests. The peaks here were not too distant and gave plenty of height to our pictures.

The station-master, Mr. Juneman, could scarcely do enough for us, allowing us to use his private office for changing our plates and to sleep on the baggage-room floor.

About sunset a heavy shower passed over to the East, and across it was drawn a brilliant rainbow. I exposed a small plate upon it and was pleased to see that it came out very clearly when the plate was developed.

I must not fail to mention Professor Carter. The very polite station-master urged us not to fail to visit the "Museum," as he called it, a private museum of zoological specimens. We were a little skeptical of finding any remarkable interest in such a collection in this remote Alpine village. But in the evening we went to see it. I was quite astonished. Here was a collection, apparently almost complete, of the fauna of Colorado. The large house containing it has all its rooms well filled. The quality of the specimens moreover is beyond praise. The workmanship is skillful and thorough. The specimens are many of them selected, *i. e.*, the largest that could be found. The pair of buffaloes, of grizzly bears, of mountain deer, and so on, would delight the heart of Nimrod. Professor Carter spends weeks at a time in the mountains, so that his knowledge of animal life is full and obtained at first hand. I was told that he refused an offer of \$50,000 for this collection because it is not yet complete nor arranged in the most perfect manner.

From Breckinridge the railway train climbs to a height of 11,300 feet at Climax, thence descends a little into Leadville, the second city in Colorado, situated at an altitude of 10,200 feet. Many persons cannot reside here on account of the thinness of the air. From one of the loads of the chrysolite mine, into which we descended, we brought up some very rich specimens of two kinds, one containing 400 ounces of silver to the ton, the other 200 ounces of silver (to the ton) and 60 per cent. of the total weight of lead. In some of the older mines rich ore is already growing scarce. The ground upon Carbonate Hill is so honeycombed with shafts and tunnels, that many of the buildings are undermined and tilted, an effect that was well brought out on some of our plates. We photographed moreover, quite successfully, a jiggling machine, with the men at their work, and one or two street scenes peculiar to that city.

*(To be continued.)*

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Your magazine is all that I desire. The photographs that from time to time appear in it, fill a long felt want, for the reason that, in my opinion, they show one how a good picture looks.

JOHN BRITTEN.

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I HAVE found your valuable journal a great assistance to me, and I would not be without it.

O. M. BALDWIN.

## EXPERIENCE WITH GELATINE FILMS ABROAD AND AT HOME.

BY WILLIAM H. RAU.

[Read before the Photographic Society of Philadelphia.]

SOME TIME in the spring of this year I determined on a trip to Italy, intending to embrace in a short time Venice, Verona, Milan, Florence, Rome, and Naples. Having had a taste of the fine material there when returning from Egypt, in 1882, I was anxious to secure a series of negatives for lantern slides of the many subjects to be found in that land of pictures. Having definitely settled upon a date for sailing, my time was limited in which to get together an outfit with every requirement for a distant journey. A member of this society showed me some film negatives he had just made, which were very fine, and equal in quality to any negatives I have seen. In corresponding with the Eastman Company, I was assured that if I followed instructions, I would surely succeed with their films. At the same time they sent me a sample roll to try. My outfit was 4 x 5 in size, having two roll holders marked 1 and 2; a Beck lens, with a Hoover shutter mounted on it, with pneumatic instantaneous and time exposers; a Darlot wide-angle lens, and an ordinary finder adjusted over the top; a light tripod; and enough films, put up in rolls of forty-eight, to make over one thousand exposures.

My outfit, with the exception of the tripod, was carried in a canvas case, with hinged lid having a catch and lock combined. All the rolls, with boxes of films, did not more than one-third fill my 16-inch valise, in which I also carried a supply of cut sheets of orange paper, rubber bands, a tool handle, ruby lamp, ruby cloth, extra bulb, etc., many of which were necessary during the trip. I had with me a number of small memorandum books to register the exposures.

In commenting on the compactness and lightness of this outfit, I could not help comparing it with two previous trips made, one, in 1874, to the South Pacific on the Transit of Venus expedition, when tons of material were taken for the dark room alone (using wet plates); and again, in 1881, when making the trip to the Orient, when the weight of glass (dry plates) and outfit for eighteen hundred negatives was about two thousand pounds, and required special and expensive packing. A number of my friends smiled and shook their heads in doubt when I talked of using stripping films only, no glass; but as I had given them a trial, and found them of a good quality, and quite rapid, I felt I could stand some risk, in view of the fact that so many more negatives could be made, and much expense and annoyance in traveling saved.

Together with a friend, I sailed on May 8th for Antwerp, arriving on May 19th. We had the usual fear of Custom House officials, but our baggage was not opened, but promptly passed through. Our objective point was Naples, and we determined to get there as quickly as possible, to avoid cholera and the heat, and work north towards Paris *via* Switzerland.

We rested the first night ashore in Antwerp, a city full of fine subjects, promising ourselves a treat here before sailing for home. We left for Brussels before noon on the following day, and just before starting made a picture of the peculiar engines and cars used on the Continent. We found more than we could do in Brussels in the half-day spent there, but we hoped to come back on our way home. We left Brussels about midnight, and on the lightning train arrived in Cologne at 5.40, making the run of one hundred and sixteen miles in six and a

half hours. We crossed the borders of Germany at Herbesthal, where all luggage is supposed to be examined; but we did not open out any of ours, as we had nothing but hand satchels. After resting an hour, we secured a carriage and had the driver take us to the places we had made a list of. The day being a fine one, we gathered in many subjects, such as towers of the old Roman walls, one of which had been converted into a private mansion, with elegant grounds; another into a brewery and summer garden.

The crowning glory of Cologne is its magnificent cathedral, which is, by all odds, the finest gothic structure in existence; one could spend days in photographing its many details for the architect. I made several panoramic views from the towers just at the apex of the roof. I must confess to as much weariness in going up and down the spire as in climbing Mount Sinai.

A good idea of the enormous heights of the towers can best be obtained from the village of Deutz across the Rhine, which gives a fine view, introducing a bridge of boats in the foreground. We left Cologne in a Rhine steamer, *Der Deutsche Kaiser*, early Sunday morning, and with difficulty secured places, as the boat was crowded with passengers. However, we had a position in the stern, which allowed us to make instantaneous views on either side and over the stern. *En route* to Mayence we passed the finest scenery of the Rhine.

The first choice views are near Königswinter, where the mountains seem to crowd close to the banks. Here is the rock and castle of Drachenfels, the latter in ruins. A new hotel, built in the style of a castle, stands upon one of the famous seven mountains. We pass numerous picturesque villages and various river craft, many of which are close enough to get shot at with a shutter. A peculiarity of the boats is that the masts all hinge, and they can be laid on deck when passing under the many fine bridges crossing the Rhine. Nearly all the bridges are stone and iron, and have towers at each end. In the afternoon we enter the narrow parts of the stream near the Lorelei, where a pilot is taken on board, and in a few hours arrive at Coblenz, at the confluence of the Rhine and Moselle, opposite to which rises the celebrated Fortress of Ehrenbreitstein. The day ended in rain and dark weather, so that no pictures could be made.

The experience gained in using my Hoover shutter and roll holders was worth considerable, as it gave me practice in making rapid changes. As once having sprung the shutter, I put in the slide, set the shutter, wound over a new surface, again drew the slide, and secured a second exposure on any swiftly-moving object, sighting it through my finder. I had previously set my focus and made a mark on the bed of the camera, so that it could be set without a head cloth. Passing Stolzenfels, Bingen, and many other interesting places, we arrived at Mayence about ten o'clock P.M. The next day we had a carriage take us around the City of Mayence, and secured many negatives of the Romanesque architecture, as the city abounds in Roman antiquities.

We next visited Heidelberg, which we reached late in the day; but not having any time to delay, we made our exposures on the fine old ruined castle from the Molkencur while the rain was falling.

Leaving Heidelberg at midnight, we arrived in Lucerne at 10 o'clock the next morning. One could spend many days in Lucerne and about the lakes and not exhaust the subject surrounding him.

Our stay on Lake Lucerne was made at the village of Gersan, which lies about half way between Lucerne and Fluelen. Gersan is full of choice Swiss



cottages and chalets, and nestles at the feet of the high Alps. We made an excursion by steamer over the lake to Tell's Chapel, the spot where Tell sprang from the boat of the tyrant Gessler. We climbed up the hill some seven hundred feet to the celebrated Axenstrasse, along which we walked for miles, until we reached that place where the road pierces the Axenberg, many hundred feet above the lake, and is tunneled through the rock in galleries, forming one of the most wonderful of Swiss mountain roads. Leaving the tunnel, we came in sight of the St. Gothard Pass entrance, some miles away, where is situated Fluelen. We were now surrounded by snowy Alpine peaks, which afford a number of fine views.

We next went over part of the celebrated St. Gothard Pass by train, making our first stop at Gröscheren, at the mouth of the long tunnel. To properly see the St. Gothard Pass, one must walk it, as we saw many doing; of course you can see in a train, but too briefly. An hour's climb from Gröscheren brings us to the Devil's Bridge, where the Reuss tumbles and falls over enormous boulders. Here and along the route we made a number of exposures of the wild mountain gorge while a drizzling rain was falling.

Returning to Gröscheren, we take the train for Milan, passing through the famous St. Gothard Tunnel, ten and a half miles long, and in thirty-five minutes arrive at Airolo, and begin the descent, arriving at Chiasso, the border of Italy, where our luggage is carried out and examined. This is the only troublesome place with the customs, as my many packages of films looked suspiciously like tobacco done up, and I just stopped an official from drawing my slide. An officer speaking English was called, who passed me through all right. We next passed Lakes Lugano and Como, and reached Milan at 8 o'clock at night. We learned here that cholera was gaining a hold, and that it would not be safe for us to risk going any further into Italy, as it was late in May and very warm. Contenting ourselves with a few views of the cathedral, and a few other important subjects, such as the Theatre della Scala and statue of Leonardi di Vinci, we returned to Switzerland, going to Geneva *via* the Mont Cenis Tunnel, making no stops.

*(To be continued.)*

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## MY CYANIN EXPERIMENTS WITH GELATINE EMULSION.

BY V. SCHUMANN.

*(Continued.)*

As long as the sensitive curve only was to be taken, I applied a wedge slit, which, according to requirements, I could set wider or narrower.\* The opening of the slit at its widest place was not less than 0.12, sometimes 0.23, and in some cases 0.50 mm.; the effective slit length 17 mm. The time of exposure varied from  $\frac{1}{2}$  to 60 minutes. Upon most of the plates I generally made three wedge-slit views of  $\frac{1}{2}$  and 28 minutes' exposure.

For sensitometric measures I took the parallel slit, which, to shorten the time of exposure, I opened to 0.25 mm. The slit length I shortened to 8, sometimes even to 4 mm., to enable me to photograph 12 and 24 spectra of even width in succession upon a plate measuring only 13 cm.

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\*The slit-rail of my spectrograph possesses three edges, two of which have micrometers. The wedge-slit angle I can vary within its longest limits and can easily find again every position.

The resistance in the spectrograph and the light source remained constant. I had to change therefore—contrary to the scale sensitometers (Warnerke)—the time of exposure for each view, if explanation was desired about the relative sensitiveness. I exposed generally in rotation 4, 5, 7, 10, 15, 20, 30, 45, 60, 80, 100, 120 seconds,\* and so obtained 12 small spectra, from which I could determine easily the relative sensitiveness of one and the same plate towards different rays, and the behavior of different plates to one and the same ray; the behavior of the sensitiveness being generally in the reverse to the time of exposure.

It is strictly necessary that one unexposed strip, no matter how small, should remain between each two of such spectrum views, upon which the most faint spectrum traces can be delineated. For the sharp determination of such color-sensitive conditions just then are of particular value.

*The behavior of the plates in the spectrum.*—I have only been able to take the solar spectrum a few times upon cyanin bath plates, although the plates were coated, without exception, with cooked emulsion. The photographic maxima of the solar spectrum in orange and yellow deviated sometimes, it is true, in a remarkable degree, but all views show that the plate is more sensitive for red and yellow than for blue and indigo. If I exposed for a short time, a difference could not be detected; but if more than a faint hue had appeared from the spectrum, then a difference was visible, and by insolation of several seconds the photographic maximum of the whole spectrum was not only with regard to elevation, but also to intensity in the weakly refractive part. If I extended the time of exposure still further, the originally clear lines of orange and yellow were covered almost to disappearance, and the spectrum picture extended to infra red. The Fraunhofer line A then appeared clearer than I had ever obtained it before upon any plate. The lines in the blue and indigo, on the contrary, remained much longer. This appearance may be due to the intensity of the more refractive part of the spectrum compared to red, half having a tendency to remain upon the plate.

If the solar disk is not quite clear, or even covered with clouds, the spectrographic results are oftentimes contradictory. I have always been able to confirm a considerable sinking of the orange maximum upon my former cyanin plates † as soon as clouds appeared. The behavior of my cyanin bath plates in this direction I have not yet been able to determine. Upon eosine plates, on the contrary, no matter whether they were colored in the emulsion or upon the plate, a considerable rising, as well as sinking, of the yellow maximum was repeatedly observable by an instantaneous succession of the views taken. I possess plates which according to one spectrum are most sensitive for blue, while in the spectrum below, the photographic maximum shows in the yellow. Upon a methyerythrin bath plate, and with slightly over-clouded sun, the yellow appeared only once, and no trace of blue could be seen.

I have made use of the petroleum light much oftener than the sun. The before described arrangement has served me for several hundred views. If one makes spectrographs in kerosene light solely, the want of a

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\*A chronograph (Longine's patent) gave excellent service for this. But the taking of these spectrum rows was greatly facilitated by the arrangement of my plate holder. The handles for the common shutter (flap with counterweight upon horizontal axis) and changing the plate holder are close together. A quick acting mechanism stops the latter as soon as it has moved 9 mm.

† At that time my plates were colored in the emulsion and therefore less sensitive than they are now.

comparative spectrum is pretty soon felt. It is then sufficient if, from time to time, a known spark spectrum is photographed into the kerosene spectrum. Now and then I have also taken, together with the kerosene spectrum, the sodium line D, and for this purpose inserted a small chloride of sodium alcohol flame near the kerosene lamp into the passage of the rays. The yellow line appears upon cyanin bath plates under moderately long exposure. It must also be taken into consideration that the alcohol flame does not emit only yellow rays, but more refractive ones.

The kerosene light has done me good service from the beginning of my photo-chemical experiments. Years ago I was able to take portraits with it. I even used it during the night for copying small pictures upon albumen paper, and proved by its aid, with infallible certainty, the advantages of iodide of silver for the gelatine dry plate. And later on, when making quite reliable results, examined my orthochromatic plates only in the spectrum of the kerosene flame. Notwithstanding these manifold advantages, certainly deserving regard, which the kerosene lamp repeatedly offered me, I was to learn its full value first only when I exposed my bromide of silver plates bathed in cyanin solution to its rays.

A bathed cyanin bromide of silver gelatine plate in kerosene light is fifteen to twenty times as sensitive for spectrum red as for spectrum blue. The exposure for the latter would have to be therefore fifteen to twenty times as long as for the former, to obtain an equal impression. This condition is only true—exactly as in sunlight—for the first action; because, if the exposure is longer, the decomposition of the silver particles in yellow and orange seems to increase progressively.

The maxima of the petroleum spectrum are at  $C \frac{1}{2} D$ ,  $D \frac{1}{2} E$ , and G; they increase towards both ends as soon as continuously exposed. But while the spectrum increases considerably in the more refractive part (I follow it to the Fraunhöfer line P), the plate resists at  $F \frac{1}{6} G$  the coloration with an extreme stubbornness, no matter whether sunlight or kerosene light is applied.\* The maxima of yellow and orange meet together, forming one, and this extends to the Fraunhöfer line  $\alpha$ , passing thence into a steep rising and then rapidly falling maximum, which falls pretty closely upon the Fraunhöfer line H. The steep maximum in red is surprisingly thin, but even at its height it does not reach to the other maxima. It appears only in the spectrum of the kerosene light. In sunlight I have not yet observed it.

To determine what antifogging security the colored glasses used for lighting the dark room will offer for the development of cyanin plates, I covered the slit opening of the spectrograph partly with a red and partly with a dark yellow strip of glass. The petroleum spectrum taken through this is composed of three spectra, and shows distinctly how little even the red covering glass is capable of keeping back the effective rays; it has caused the creation of an intense maximum, which reaches from the Fraunhöfer line D to B, but otherwise it has kept back all effective light. The yellow glass proves much more transparent; its spectrum, although hardly more dense in orange than the foregoing, extends as an intense band through the yellow to the Fraunhöfer line F. Of the blue and

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\* The surest way would therefore be to develop such a plate with cyanin blue light, it offering less danger of fog formation than behind a red covering glass. My experiments to construct a light-filter, which admits only the rays of that uneffective spectral district, have been so far, unfortunately, without success and I have developed by the light of my brown tissue-paper.



violet, which has acted so visibly in the spectrum of the unimpaired light, no trace has appeared.

The yellow glass of the dark-room light, if it altogether prevents the formation of fog upon cyanin plates, can therefore act only in consequence of decrease of the optical clearness, and not by keeping back the chemically active rays. If candle or kerosene light is used in the dark room, the red glass will give those rays which produce the greatest fog of all, the red ones.

A triple layer of brown tissue-paper is much better in such a case; it gives more light than the former, is better proof against fog, and is decidedly more agreeable for the eye. This cannot be said of the red glass.

*(To be continued.)*

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## THE AMERICAN FILM PAPER—DIRECTIONS FOR WORKING IT.

BY WILLIAM H. RAU.

[Read before the Society of Amateur Photographers of New York.]

IN attempting to give you an example of the working of films, I claim nothing especially new, but simply give the result of several months' experience with them.

I see in them many advantages and few disadvantages.

The operations are simple enough, but seem complicated when reading the directions for using. During a two months' trip to Europe last summer, I used the Eastman films exclusively, having no glass plates with me. I will begin with the roll holder; I had two with me, to provide against missing a chance to change at night on account of travel. In placing the roll in the holder no mistake can easily be made, as the reel holding the paper has a slot at one end which fits only in one place; bringing the film surface right when the screw on the other end of the reel is up in place. Care should be taken to adjust the indicator to make it start always from the same point, to guard against overlapping exposure. This is absolutely necessary, as otherwise you can never know if a full new surface has been wound over. Be sure the end of the paper is pulled tight and even on the flat surface, in order that it may wind evenly.

Have both the brakes set that hold the reels, otherwise the paper will not be taut, and lack of sharpness will result.

In placing the roll in the holder, there is no danger of touching the film, as it is wound inside, and need only be held at the end to place it in the brass clamp that holds it. If you are traveling and have with you a number of rolls, it saves much time and trouble to have a reel for each roll to avoid unrolling. In this manner an exposed roll is ready to pack as soon as taken from the holder; it can be placed in the same box it was originally in and securely protected from light by wrapping in thick or non-actinic paper. I will say in conclusion about the roll holder, that the mechanism is perfect, and all the parts fit accurately, although I think some better method of marking the end of each exposure, and indicating the number of exposures made, would greatly enhance its value. For a careless worker I fear there will be a great deal of trouble to know when things are right. A system should be adopted and closely adhered to, for I found that those who failed worst, did so in cutting their exposed rolls into pieces for the development.

Mine were 4 x 5 inches. I had a glass cut the exact length of one exposure. But first, before using the rolls, I drew my slide and made a lead pencil line at each end, on the face, thus indicating the first exposure. From this I used my glass form as a measure and cut with long shears, closely watching the perforations made in the edge by the roll holder to avoid the slipping of the glass. In using the roll holder, I would suggest winding over a new surface immediately on having made an exposure; in this way you can be sure of not doubly exposing.

To keep a record of all exposures, I began keeping an accurate register in a book, and when the reel was taken out and packed I gave it a number, which number was also given on the record book. When ready to develop, the roll was unrolled to the beginning and the number of the first exposure written with pencil on the back. When exposed and cut, the pieces were held under a running stream, then placed in a porcelain dish of water until limp, after which, drain off the water and flow over the developer.

Having used carbonate of potash for years as a developer, I reluctantly tried oxalate first, and found it worked very well, but acted slowly until a certain point was reached, when it became very active and overreached me. The resulting negative was of a fine gray color. I next tried the soda formula given by the Eastman Company, but it seemed to work very dense in my hands, so I determined to try my old formula of potash.

Carbonate of potash .....	4	ounces
Sulphite of soda .....	2	"
Water .....	16	"
Pyro .....	1	ounce
Sulphite .....	1½	ounces
Water .....	16	"

1 dram of each to the ounce of water.

This worked very well and gave me any desired amount of intensity. When an exposure was to be developed that had been made in a weak or flat light, I generally added one half more of the pyro solution. I found the greatest error can be made in the density of the negative; you are apt to stop too soon, as the thickness of the paper makes the negative seem stronger than it really is. I found a concentrated light, such as given by a lamp or gas jet, was better to judge by than an ordinary window. The films begin to develop slowly, then build up evenly, and give any intensity if the development is continued. Don't develop more than one at a time, and use fresh developer each time, as I found the developer lost strength after being used on one film, and was too weak to use again to secure fine results. I washed each negative by handling it in a porcelain dish before placing in the fixing bath. I had a deep dish for the hypo solution, which was made of hypo 4 ounces to the pint of water. I allowed a number at one time to remain in the fixing dish; in fact all that were developed in one evening were left in, until the last one was done. I moved them about every little while to insure their being thoroughly fixed. I washed them in a dish having a running stream, moving every ten minutes, as they usually soaked all night in water, which I think removed most of the hypo. In transferring to the glass, care is especially necessary in coating the glass with the rubber solution and getting it dry. I coated them in the evening and set on a rack until next morning; usually six hours will be long enough. Use the glass a size larger

than the film, to allow for handling. Slip the glass plate under the negative, which should be face down in the water, and lift them up together; drain well, and remove the water by scraping with a rubber squeegee, and set aside to dry. Be careful in placing the film exactly in position on the glass before lifting out of the water, as any attempt to move it may pull away portions of the rubber and expose the uncoated glass surface, which, coming in contact with the gelatine film, will not allow it to be drawn away again after it once becomes dry. Now, as to the degree of dryness to be reached before taking away the paper, this has acted differently with me at different times. I hardly know if the hot weather affected them or not. However, in August I found it was unsafe to begin the soaking off until the paper was perfectly dry, but since then I find they come away quite readily when only surface dry. The films I had with me were coated some months before development, which may have caused the substratum to be effected by the temperature. This may have had something to do with it. However, I always get the paper away, even when repeated doses of hot water are required. To strip away the paper, soak the glass with film in a dish of warm water for a minute or two and pour away, adding boiling water, when the paper will blister and can be gently pulled away, leaving the film on the glass. Remove all traces of substratum of soluble gelatine with a tuft of cotton and warm water. It can now be either reduced or intensified before going any further, or a proof can be taken to judge printing quality; in fact the operations can be performed the same as with dry plates.

The plate is now ready to be coated with the stripping varnish, or covered with a gelatine skin which can be swelled and floated over the film on the glass, and gently squeegeed and allowed to dry. I did not use the stripping varnish, as I found it quite impracticable to do so with a large number of plates, as they must be allowed to dry level, in which position they catch a great deal of dust which adheres to the gelatine and cannot be cleaned off. I used the skins exclusively, and soon found they could easily be handled. I used a rubber tray much larger than the plate, having it full of clean water, then slipped the skin into the water and slid it under to avoid air bells, which, once formed, cannot easily be rubbed away; put in with the glossy side of the skin down, and allow to soak a minute until thoroughly limp; slip the glass bearing the film under the gelatine skin and place it (the film) carefully over the film negative, and hold in position with the fingers while lifting from the water; drain a little and draw the squeegee gently over it, which brings the two soft gelatine surfaces in close contact. They must now be allowed to become thoroughly dry, after which they can be stripped away from the glass and the adhering film of rubber removed with a little benzine on a tuft of cotton. If not quite dry when stripped they may pull out of shape. This can be remedied by again placing in water and, when fully softened, again squeegeeing down on a glass coated with rubber and allowing to dry. When the skins are used the negatives cannot be printed from both sides, as they are thick and will not admit close contact with the silvered paper. But they give a pliable, strong negative, which can be handled better than if stripping varnish had been used. Some may object to the skins because they have a ground surface, but I find this does not show in printing. Should a negative be used a great deal to make silver prints from, I would recommend coating the film side with plain collodion to protect it from stains. Print through a fine ground glass with the rough side of the glass next the film



negative. This gives soft prints and prevents the sticking together of the glass and film.

In conclusion, I would say that I find the films fully equal in quality to the best negatives made by any other process that I have seen. They possess every gradation to be found in a glass plate, with no danger from halation. I have negatives with every degree of light and shade in them, from snow-capped mountains in the distance to heavy shadows in a tunnel in the foreground, showing and preserving every gradation as no glass plate will do. They are not so rapid as the most rapid gelatine dry plates, although I have made a number of instantaneous pictures with them. If they are forced in development they show a grain that some call paper grain, but which I think you will find in any under-timed negative that is forced in development. The advantages of film negatives are that they are light, and easily carried and stowed. The coating is done with machinery and is more even than on glass, and I have found them uniform in quality. They render violent contrasts better than glass and give no halation. The film can be thoroughly washed free from chemicals, as its soaking in water will surely dissolve anything left in it. Its use in a roll holder saves bulk and weight, and makes travel with an outfit a pleasure instead of a burden, and it saves annoyance with the Custom House officials in going abroad. The disadvantages are that it takes longer than glass to have a finished negative, and is wasteful when you wish to develop part of a roll before exposing all of it. They require greater care and cleanliness than glass.

#### THE STANLEY SODA DEVELOPER.

To insure uniformity in results, the following developer is recommended by the Stanley Dry Plate Company to be used on the Stanley plate.

No. 1.	TROY.
Sulphite of soda (crystals).....	6 ounces.
Sulphuric acid, c. p.....	1 dram.
Pyro.....	1 ounce.
Water.....	80 ounces.

No. 2.	
Carbonate of soda.....	6 ounces.
Water.....	80 “

Mix in equal parts for ordinary exposures. After mixing, the two solutions will keep for several hours.

This developer can be used for three or four plates, but works more intense after the first plate; therefore, for under-exposure use fresh developer, for over-exposure use old developer, *i. e.*, developer which has been used before. This developer works best when kept at a temperature of 70 to 85 degrees F.

#### *Fixing bath.*

Hypo.....	2 pounds.
Pulverized alum.....	2 ounces.
Water.....	4 quarts.

The alum in fixing bath hardens the film so that more heat can be used in drying the negative, and prevents frilling and blisters.

For the sake of convenience, the above stock solutions are now sold put up in a concentrated form in bottles, so that small quantities can be diluted to the required strength with water to form a normal developer.

## AN OPEN LETTER.

INDIANAPOLIS, IND., October 6, 1886.

E. &amp; H. T. ANTHONY &amp; CO.

GENTLEMEN,—In the hurry and bustle consequent upon the great amount of work to be done in so short a time at the convention, the obligation to your house for the greater part of one of the most prominent features of the convention, the Foreign Exhibit, was not properly recognized.

Every one at the convention recognized and appreciated the magnificent results of your efforts, and it was purely an unintentional oversight that the sentiments of gratitude felt by all toward you were not bodied forth in appropriate resolutions. Therefore, as you undertook the task at my solicitation, and, notwithstanding the labor and expense, greatly exceeded my expectations, I take this means to acknowledge the debt of thanks the association owes you.

Your obedient servant,

W. H. POTTER,

*President P. A. of A.*

## OUR ILLUSTRATION.

WITH this number of the BULLETIN we present our readers with a silver print from one of the negatives that produced the beautiful cabinet pictures that took the \$50 cash prize of our publishers at the St. Louis Convention. As works of photographic art these pictures leave nothing to be desired, and Mr. Elton has produced for us the handsome print that serves for our illustration of this issue of the BULLETIN. The negatives were made upon Stanley plates with a Dallmeyer lens, and the prints are on N. P. A. paper. As studies in photography these pictures are of a high order, and Mr. Elton deserves much praise for the artistic taste displayed in them. If any of our readers desire to obtain copies of all the prints, Mr. Elton will be pleased to supply them. See his advertisement in our business columns.

ENGLISH amateurs visiting America must use lenses of remarkably long focus. One of them says, in the British Journal Almanac, that "in Chicago there are some fine views to be got of Lake Erie" (which is only about three hundred miles away). But that isn't a circumstance to what another writer, in the Photographic Year Book, chronicles, when he gravely tells how "Professor Langley studied the solar spectrum from the top of one of the peaks of the Alleghany Mountains in California."

FORCE OF HABIT.—"Now, then," said the photographer, as he was about to take the picture of a convicted pickpocket for the Rogues' Gallery, "are you ready?"

"Yes," growled the criminal.

"Well, just keep your eye on that hole in the wall and look pleasant."

"Now, MISS," said a photographer to a young lady whom he had seated in the chair of torture, "you just look at me as if I was your young man and you'd met me unexpected like, you know."

# ANTHONY'S Photographic Bulletin.

EDITED BY

Prof. C. F. CHANDLER, Ph.D., LL.D.,  
Aided by ARTHUR H. ELLIOTT, Ph.D., F.C.S.,  
and a corps of practical assistants.

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Advertisements should reach us not later than the Saturday preceding the issue for which they are intended, otherwise we cannot promise to publish them in the succeeding number. It is also necessary to notify us of any alteration before the date above mentioned, and to state for what period the advertisement should be continued—whether for one, six, twelve or twenty-four issues.

*E. & H. T. ANTHONY & CO., Publishers.*

## PHILADELPHIA AMATEUR PHOTOGRAPHIC CLUB.

THE first regular meeting of the Philadelphia Amateur Photographic Club, after the summer adjournment, was held at their rooms on Monday evening, September 20th, with *Vice-President* GILLINGHAM in the chair. Full attendance present. Minutes of previous meeting were read and approved.

The Executive Committee reported the election of S. D. Hopkins and E. Bancroft to active membership.

Mr. HAINES called attention to the fact that during the summer the club had forwarded a frame of pictures to the Minneapolis Amateur Photographic Club, to be exhibited at the Minneapolis Industrial Exhibition.

Mr. CLEMENTS, of the Executive Committee, stated that a number of improvements in the club's dark room were necessary, and asked that his committee be allowed to draw from the Treasurer a sum sufficient for the purpose.

Agreed to.

In regard to the Home Portraiture Competition suggested last season, Mr. Haines regretted that the members had taken so little inter-

est in the matter, and then stated that the Executive Committee had empowered him to offer a year's subscription to any photographic journal published either in this country or England to the member submitting the best portrait at the December meeting.

## RULES GOVERNING CONTEST.

*First.*—Negative to be exposed and developed by competitor without any outside assistance.

*Second.*—Prints from negatives must be submitted before retouching.

*Third.*—Portrait may be taken either in or out of doors, but not in a glass-roof studio.

*Fourth.*—Winner of contest will be decided from print.

*Fifth.*—Judge to be a competent professional.

Mr. H. L. Roberts showed some views taken with Gray's Vest Camera, and Mr. Clements exhibited his McKellar Camera, which he had brought with him from England.

Meeting then adjourned to witness an exhibition of lantern slides from negatives made by members during the summer.

The exhibition was more than usually interesting on account of the large variety of subjects presented, embracing as it did, views in Niagara, Canada, England and France, together with a large number of local views.

W. W. RANDALL,

*Secretary.*

## THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.

REGULAR MEETING, OCTOBER 12, 1886.

*President* BEACH in the chair.

The *President*—Gentlemen, you will please come to order. The first business will be the reading of the synopsis of the minutes of last meeting.

The *Secretary* then read the synopsis of the minutes.

The *President*—If there is no objection the synopsis will stand adopted.

The next matter will be the reading of communications. I believe the Secretary has none, but he has a list of members recently elected, which he will read.

The *Secretary* then read the following list of new members: John S. Bussing, active member; Z. Taylor Benson, subscribing member; Alvey A. Adey and Joseph Marks, corresponding members.

The *President*—I believe the Secretary has a report of the Librarian.



The *Secretary* then read the report of the Librarian, as follows:

[Report of Librarian.]

Since the meeting of September 29th, there has been received the following books:

"The Magic Lantern and its Applications," by Professor L. H. Laudy, with the compliments of the Author; "Marion's Practical Guide to Photography," 1886; and a large photograph, entitled "Handy Map of the Moon."

ROBERT BAKER,  
*Librarian.*

NEW YORK, October 12, 1886.

The *President*—The question of the prize photographic cup is being agitated among the members of the different societies, and I have been informed that the Philadelphia Society has decided not to compete for the cup, but that the Pittsburg Society will compete for it. Mr. Blair, who is the originator of it, would like some action taken by this society, and would like to know what we think about it and what we intend to do, and I believe it is a matter which ought to be carefully considered and ought to be properly referred to the Committee on Joint Exhibitions, as it comes under that head, unless any of the other members think differently.

Dr. JANEWAY—I move, Mr. President, that the matter be referred to the Committee on Joint Exhibition, with power to report to the society.

Motion seconded and carried.

The *President* then explained and exhibited an improved form of camera invented by a subscribing member, Mr. E. Barker, which consisted in having one lens front and bed frame on which could be mounted different sized backs with bellows. One end of the bellows was fastened to the back frame, while the front was attached to a circular wood ring. A pivoted flat brass hook on the back of the lens front held the ring in position and permitted the bellows to be rotated. If a 5 x 8 back and bellows was to be unshipped and removed, the flat hook was raised and the circular front slipped out; then by pushing the back sidewise with a knock, it was at once released from the bed frame. An 8 x 10 back with bellows could be immediately attached in the same way. The object was to save the expense of having two complete cameras.

He then exhibited an improved tripod, and spoke about it as follows: It is a combined hinged and sliding tripod. The lower part is sliding, so that it supplies any irregular-

ities that are ordinarily met with, and it is very strong; and under the head of the tripod is a flat brass spring, acting as a lock to keep the legs from flying off their hinges, a difficulty which we meet with sometimes.

To take the tripod apart, you press the flat spring up against the under side of the head and compress the legs and they come out; then you fold the legs over on the side, and the sliding leg pushes up so that the entire length of the folded leg is about twenty-one inches and will go in an ordinary large size gripsack or valise.

These are the two points, namely, that it is strong and compact, and the legs will not slip out. It is the invention of Mr. Lewis.

Mr. Grisdale has placed an attachment on his camera for working Barnet holders. He has a 5 x 8 camera, and it is frequently desirable to take 4 x 5 pictures with the same instrument, so he has a special frame arranged with a ground glass, which occupies the same space as the ordinary holder.

Now this frame, you will observe, is made about as thick as the ordinary plate holder, perhaps a trifle thinner, and really takes the place of the plate holder on the camera. You withdraw the ground glass from the frame by sliding it upward and then you insert the Barnet holder in the same place. Here [indicating] is the holder (4 x 5) which, after it is inserted in the frame, is ready for the photograph [indicating]. There is a small flat spring at the bottom which keeps the holder in place. Mr. Grisdale says that ordinarily he does not use the ground glass which goes in this frame, but takes the whole frame out and focuses on the large ground glass. Then on his 5 x 8 holders he has a good idea for numbering, which is to number the interior septum. Frequently in plate holders you number them on the outside, and sometimes when you draw the interior septum out you get mixed up and forget which plate it is, but by having them numbered on the inside, the same as it is on the outside, you are always sure to know which plate you want.

Then he has another idea, of painting one side of the end of the slide white. That side now being outward, shows that the plate has not been exposed, and after it has been exposed you simply push the slide in [indicating], so that the black slide comes out.

Mr. J. P. BEACH—That is a very good idea.

The *President*—Then you know which has been exposed and which has not. It is very simple and yet very plain. Any holder can be fixed in that way.

Another very curious improved camera was designed by Mr. Loeber, one of our members. It is a box which weighs about nine pounds by itself, but when filled with twelve 5 x 7 plates weighs twelve pounds. The idea is that you carry all the plates with you that you want to have exposed.

You observe the front part or side is made with a frame which has a lid which is intended to resemble one side of the box, and then, when you extend this out in front, the lid drops out and that exposes the lens to view, and the lens front. The bellows also is held in position by these X-shaped joints, which extend and contract at pleasure. The rear is provided with a ground glass for focusing. It is not in there now, but it ordinarily slides in. He has arranged here on the lens a Prosch shutter. A flat sliding rod is attached to the lens front, which slides over the upper foci of the back of the camera. The idea is to mark this rod with scales for the focus for different distances, so that, as you move the front back and forth, you can judge when you have got fifty or eighty feet or less.

Now the plate holder is the part which is rather novel. This holds a dozen plates, and it is arranged so that in the act of pulling out the sliding part of the holder you change the plate, and it changes very easily and very rapidly. Now suppose you make your exposure. [Mr. Loeber, standing near Mr. Beach, then drew out the slide.] On the top, inserted right in the box containing the plates, near the upper end is an indicator, which is automatically worked by a little strip of metal upon the slide of the holder as the slide is pushed in and out.

We will suppose the indicator is now at zero. Now, in the act of pushing the slide in it automatically works the indicator, and indicates to the eye that you have made one exposure. Having done so you want to change the plate. This is done by simply pulling out the sliding portion of holder and pushing it back, which sets a new plate in place, and at the same time the indicator is rotated a trifle.

Mr. LOEBER—First you make your exposure, your indicator showing zero. Having done so, there is no number exposed through the indicator aperture. Then, in changing the plate, No. 1 on the revolving dial comes forward, and when you make another exposure, in pushing your slide back there is a space between No. 1 and No. 2, and you change your plate and No. 2 comes forward and you are ready for another exposure, and so on for twelve exposures. When there is no number

it indicates that you have exposed your plate and not changed it, and when there is a number it shows that you have changed your plate; so that there is very little danger of making two exposures on the same plate.

*The President*—Now we will show you the internal mechanism of the plate-changing apparatus.

Mr. LOEBER—There are twelve zinc carriers, each holding now a plain glass plate. You make your exposure and in pulling this [referring to the sliding portion of the holder] out it takes the plate from the top and it drops to the bottom, and pushing it [the sliding portion] back slides the carrier under the back and pushes the other carriers holding fresh plates up in the place of the first one.

Dr. PIFFARD—What is the size of the plates?

*The President*—They are 5 x 7.

Mr. APGAR—Don't they [the sensitive plates] run the risk of being scratched?

Mr. LOEBER—There is space enough between them to prevent them from being scratched.

*The President*—The plates are held in zinc carriers and there is no chance for that.

The sliding portion of the holder is provided with a hook arrangement on the under side of the cover. These two hooks here, as you see at the end, draw the plate carrier holding a sensitive plate right out, pulling it like this [indicating] until it falls, and when you go to push the sliding portion of the holder back there is a plug at the bottom which strikes the end of the plate carrier, pushing it up an inclined plane under the other plates, raising the whole lot up. The act of pushing the holder back accomplishes the change.

Furthermore, when the sliding portion is drawn out, there is a flat spring to assist in pushing the plate down.

We have some photographs that have been taken by this instrument, which we will pass around. It is also arranged for putting on the tripod so as to make a time exposure.

Dr. Janeway then showed an improved Prosch Duplex Shutter brought by Mr. Apgar. The essential change consists in simplifying the release device for making an instantaneous or time exposure, by means of which a delicate release is secured regardless of the high tension on the shutter spring. A special rotating diaphragm disk is pivoted to the shutter case, permitting any sized aperture to be used and dispensing with separate stops.

*The President*—Are there any other remarks to be made on this shutter?

Mr. J. P. BEACH—Is there any arrangement on that shutter for a diaphragm?

Mr. APGAR—The diaphragm is attached to the shutter.

The *President*—I wish to say just here, that we intend to have an entertainment on the 18th of November, and we expect Mr. Robert S. Burdette, the humorous speaker, will entertain us, and there will also be a lantern exhibition. Tickets will be 50 cents each. We want to have as many members as possible take an interest in it and purchase tickets, and have a very large attendance. The object is to raise some money to carry out some improvements which we want upstairs, and I hope members will remember it.

Mr. KING—You have not said where this is to be held?

The *President*—At Association Hall, on the corner of Twenty-third street and Fourth avenue. Mr. Parsell and Mr. DuBois have both volunteered to give the Hall and Mr. Burdette's services to the society, and we would like to have some other gentleman come forward and pay some of the smaller expenses, or help pay them, so that all the receipts we get will be net cash to turn right into the treasury. We want to receive about \$50 or \$70 to cover the cost of printing and the lantern operator, then we will be secure for the net receipts.

I would also state that Dr. Piffard has kindly loaned the society a pair of scales for its use. Mr. Spaulding, at my request, has volunteered to give us a little talk on his experience out West this summer. He went out among the Rocky Mountains. We shall be pleased to hear from him.

Mr. Spaulding then read his paper [see page 648], which was received with applause.

The *President*—I believe Dr. Janeway has something to say on "Don'ts and What Will We Do With Them." But before we have the pleasure of listening to him, I want to say this: I omitted to say that I had an improved magic lantern chimney which I wish to show—the principle is shown on the blackboard. The old-fashioned way is to have a cone right over the chimney, so arranged that the light and heat come up and strike the underside of the apex of the cone and then comes down. I ascertained by some experiments that this retarded the brilliancy of the light, so I had constructed a special chimney in which I inverted the cone as shown on the second figure on the blackboard. The object is to prevent the light from coming up and still let the heat freely escape. The heat rises and is simply deflected by the inverted cone and easily escapes. By

that method the light is not diminished at all.

Now we will have the pleasure of listening to Dr. Janeway. As I said before, the question was "Don'ts, and What Will We Do With Them." It is proposed by the Question Box Committee.

Dr. JANEWAY—*Mr. President*: The Question Box Committee have a hesitancy in introducing this subject, for you all know the human mind is rather inclined to the negative than to the positive. Very much like the story that is told about the celebrated beauty in the Court of France, who said to her father confessor that she should love the ten commandments if it were not for the "nots" in them.

We have a few little specimens here as "don'ts," and I hope that members will insist on an answer of what to do with them.

The first one is, "Don't fail to attend the meetings." Why?

If you would think about that subject a little while, it will strike you as being of great importance. If you can think of it in a pecuniary point of view, you will conclude that if you do not attend the meetings you are losing what you pay for. It also shows you that if you fail to attend the meetings you are losing an interest in the society, and the more you stay away from the meetings, of course it throws greater work and greater labor upon those who do attend. There is many a hint—a remark thrown out in discussion here, or in a lecture, or in a mere discussion of a resolution—which oftentimes will solve a question that has arisen, or a difficulty that may arise, in your experiments, and will often help you in your amateur work.

The second don't is, "Don't fail to put a question in the box if you meet with a difficulty." Why?

You may think that the difficulty which arises in your experiments is too small to call the attention of the society to it, but in thinking thus you make a mistake. How are we going to know anything in this world if we don't ask questions. Our whole life is taken up in asking questions. It has been my observation that those who don't ask questions are the very ones that don't succeed.

The third don't is, "Don't think that the Committee on Question Box should make up all the questions." Why?

I hope the members don't think that all the brains of the society exist in the noddles of the three members of this Question Box Committee. As far as I am concerned, I know



there is a great deal more wisdom outside of my noddle than there is in it.

The fourth don't is, "Don't think you can do as well with a new plate as some one else has." Why?

There are a great many reasons why. In the first place, your fingers may not be quite so nimble as another person's; and in the second place, you will find that your hand may not be as well trained as another's; and in the third place, you will find that one person may not give as much attention to it as another person will.

The fifth don't is, "Don't be discouraged; if you don't." Why?

I don't suppose that there is a member of the society that has not met with failure in some one of his little operations with a dry plate, or a wet either (laughter). I don't think there is any great discovery or little discovery known to the human mind, or human race, but what in experimenting, and finally accomplishing the discovery, there has not been a great many discouragements. A man may think that he has made a great discovery, and thinks that he has got it all right and nice, and that it is sure to work every time, and still another who attempts it might make a signal failure in regard to it. Don't be discouraged, and if you don't succeed at once, go on and try it over again. We have a story told in the "Scottish Chiefs," you know, when they failed once or twice, but, nevertheless, that did not discourage them, and they tried it over again. We also have the story in Mahomet. He failed at first, but he got along after a while.

The sixth don't is, "Don't go into raptures over a new developer, and make a large quantity." Why?

You will find that sometimes a developer may do first-rate on one plate, and you think that you have got just the right thing. Perhaps in that case the lights have been just right and the time just right, and you have got just the right quantity of developer on it, and the next plate may be a little under or a little over-timed, and your developer may have been weakened a little, and may have been a little too strong. There are a great many big "ifs" all around you.

"Don't believe everything that you read in the journals and papers of the day concerning photography;" and why?

You will certainly be deceived if you do.

"Don't dust off your plate before placing it in the holder." Why?

A film is on the plates, and it is generally dusted with a camel's hair brush. It takes on

it a certain electrical quality, and if there is any dust in your holder it is going to fly right on that plate, and you take up your plate and use it without dusting it, and you have got your pin-holes and everything else that makes you sweat. Dust it after you take it out, and just before developing, and then afterwards dust your holder.

"Don't take your plate out of the hypo bath too soon." Why?

If you do you will have a fog or a veil, or you will have something which will stop what would have been a good printing negative for one which is pretty poor, and you will lay it to your plate, or your developer, or your hypo bath, or to everything else than that to which it is actually attributable.

"Don't expose your plate, even if it is dried, to a strong sunlight—after it is even properly dried;" and why?

We all know that a negative—I know from positive experience—diminishes in printing value by being so exposed.

I hope some gentleman will give us some more don'ts. [Applause.]

The President—I would like to hear from Mr. Roosevelt.

MR. ROOSEVELT—The first thing I would start off with, Mr. President, would be "Don't catch a cold." It is a thing I am laboring under at the present moment; but still I think I can say a few words on the subject, and probably you can all hear me.

In reference to the Question Box, I thought the work of the evening had been applied to it. I could have filled that box with questions for every meeting, only I thought that the Question Box Committee meant, if they didn't say, "don't."

I came here with one thing on my mind very strongly, and that was "don't" fail and "don't" forget to worry Professor Newton over the dry pyro developer.

I have been worrying him a little, but not half enough. I have tried the dry pyro developer (being enthusiastic in breaking one of the rules of to-night—"don't try anything new"), and, especially for my instantaneous pictures, I have had some remarkable results. Some have been remarkably good and others have been remarkably bad (laughter). I think I have made some of the finest negatives that I ever did get, and then again, very frequently I got nothing at all. The difficulty seemed to be that I could not control the developer. It was fixed according to a certain formula. If that formula worked, all right; if not, it was all wrong (laughter), and if the

picture did not come out I could not tell whether to put in more pyro or more sulphite or more potash.

But there is one thing above all. "Don't" do as I did this summer in trying a new way for taking instantaneous pictures. I had my large camera,  $6\frac{1}{2} \times 8\frac{1}{4}$ , feeling that the little detective was not doing as big a thing as it ought to do, and arranged it so that I could take a picture by looking over the top. When I was out on a yachting trip a magnificent scene presented itself to my eye. There were lying before me vessels of all kinds and descriptions, so I put on the old drop shutter, which I am still using, being confused and uncertain as to the new ones, and after getting all arranged and focused, swung my camera around, and struck the drop shutter against something and it tumbled off into the sea (laughter). So I say, gentlemen, "don't" try that till there is some way devised for fastening the drop shutter on.

Now what I want to ask Professor Newton is this: How are we to begin the development when we don't know anything about the exposure? A plate taken instantaneously on the water is generally over-exposed, and if taken with your back to the water it is often under-exposed, and you have no earthly means of knowing whether it is over-exposed or under-exposed until you put it in the tray and find that one of your pictures comes out too quick and the other never comes out at all. (Laughter.)

MR. H. J. NEWTON—I don't believe that I am equal to the task. I got a good deal excited, Mr. President and friends, in hearing the Chairman of the Question Box Committee read a couple of little slips of paper. It put me in mind of "Anderson's Inexhaustible Bottle." All of you have seen that magician pour all sorts of things out of a bottle. The chairman had a couple of little slips of paper and he read each of them over four times and had something different every time. That is what made me think of Anderson's bottle.

Now the conundrum that has been asked is one that a great many have asked, and one that has been answered a good many times, and yet it is to be answered, and asked and answered.

When a plate is exposed to a marine view, the light of course is much stronger than from the land—where there is a large quantity of green as a general thing—and a very much smaller diaphragm should be used in exposing on the one than the other, and a little of

my experience in developing may be of some use.

I went up the Hudson River about thirty miles, to make some views on a creek that enters into the Hudson, I think, about Piermont. There are some very beautiful views there. It turned out to be a very dark, cloudy day, and when I undertook to develop my plates after I returned home, I found that they were all over-exposed, although I thought they would be under-exposed, but the light was very deceptive, and, to save the plates, I proceeded in this wise:

I always have a bottle of my old developer, and when I have a lot of plates that are over-exposed I first pour on enough of the old developer to cover the plate. Of course there is scarcely any action in an old developer that has been kept a month or two in a bottle. There is no developing action in it. But it acts as a vehicle. I make up my ordinary developer before doing this, and then pour a very little of my fresh developer into the graduate glass and put the old back into the graduate glass and thoroughly mix it and put it on again, and proceed very slowly and carefully in that way to mix the fresh developer with the old developer until the image begins to show, and then stop; and if you are not careful you will be liable to get in too much of the fresh developer, because when it once starts out, an over-exposed plate will go along very rapidly; but with care you can successfully develop an over-exposed plate in that way. I have done it, and I saved some of my negatives which otherwise I could not have saved. And there is another thing in connection with it. If you know about how much you over-expose, it is not necessary to proceed in this way, but instead use your ordinary developer weakened. Don't undertake to mix the developer with bromide after the image has appeared, but add the bromide to the developer before you put it on the plate, if it is an over-exposed plate. The chances are that you won't save your plate if you undertake to stop the development by the addition of bromide after it has once started out.

MR. ROOSEVELT—If it happens to be under-exposed, would your process work with using the weak developer.

MR. NEWTON—The old developer would not do any harm; that is, if you are going to use an old developer with bromide, keep two bottles, one without and one with, and start with the one without. If there has been no bromide in it, you can throw it all away and wash it off and put your fresh developer on it, and it

won't do any damage to an under-exposed plate. I generally throw under-exposed plates in the waste basket.

Up at Fort Lee this summer I took the balcony of the hotel—it is a very long balcony, and it is arranged so that it makes a very handsome picture. If I had thought of it I would have brought the negative along to show you, for it shows for itself better than I can tell you of it. It was taken in the afternoon, and the light was on the back of the building and all the front part was in the shadow, and in the corner like that [indicating] say, for instance, that is the outside of the balcony and this [indicating] is the building, you come to a corner like that [indicating]. It is exceedingly dark, and to get an exposure which will give you a harmonious picture would be a very difficult thing, because it is well lighted *here* and very poorly lighted *there*. Now in a corner like that (and the roof was black, or nearly so), I managed that corner in this wise: After I had got the plate developed and dried I flowed it with ground-glass substitute on the gelatine side. Then I took a crayon stump and some fine plumbago, and proceeded to apply it to the thin part until sufficiently strengthened to make a harmonious print. It is a good thing to do. It won't do your negative any harm. I have mentioned this before, I think, in this society. I know I have in other societies. I have negatives which I have varnished on both sides with ground-glass substitute. I will bring that negative here and show you the effect. I succeeded in getting a very fine print of the balcony.

Mr. BEACH—Can you tell me in that over-exposed plate that you speak of, if you added any more pyro to the developer, or did you keep it normal?

Mr. NEWTON—No, I did not add any more pyro. The pyro in the old developers seemed enough, being somewhat rejuvenated with the fresh. It was the fresh developer that did the work. More pyro can be added if found necessary.

Mr. BEACH—Precisely.

Mr. NEWTON—The old developer was a sort of vehicle to carry the new and to give you indications when the developer had reached a point that was suitable to carry on the development and not overdo it.

Mr. BEACH—In an over-exposed plate how far would you carry the development?

Mr. NEWTON—In this way you would proceed the same as you would if the exposure was normal. The great trouble is in making it too strong. If I was going to say "don't"

I would say don't make it so everlastingly and intensely strong, and I would say to professional photographers (and they are not running after amateurs to instruct them)—some of them take suggestions very kindly from amateurs, and there are some that I have come in contact with who turn their noses up when you attempt to give them a suggestion; it seemed as though the nose was hinged right here [indicating], and under certain provocation it would be elevated about so [indicating], so that if they were snuff-takers they would put it in as we put corn into a hopper and do it so [indicating], and not make a pneumatic tube of it and force it up by atmospheric pressure. I have seen exhibitions of that in my day and generation—"don't"—emphatically, don't light your pictures as you do.

I have been looking at some pictures on exhibition at a fair in this city and they are, as a rule, the worst that I ever saw. There were some exceptions, but as a general thing they were so abominably lighted that it spoiled them. They were hard and flat, and no gradation.

There is a prevalent idea, which is chronic with the profession, that a dry plate cannot be used and get the same effect of light and shadow as with a bath plate. Now I have talked about this and I have illustrated it before, but I find that my saying "don't light them as you do," don't make a bit of difference.

Mr. ROOSEVELT—You mean, don't make so strong a contrast—black and white?

Mr. NEWTON—Yes; there is no gradation at all. To look on pictures like those I saw makes my eyes smart. Now the trouble is not with the plate. You cannot make with a dry plate the same effect as you can with a bath plate and light it the same. The lighting must be different. Here within a month a gentleman came to me and said, "I have a couple of lady friends—they were sisters, I believe—that I want photographed, and I want you to go and take them." I went. Of course the professional photographer did not like the way I lighted the sitters. He thought it was not right. He did not seriously object, but still his nose was elevated. I subdued the high lights and illuminated the shadows. I have experimented so much in that region that I knew how they would come out on development. But they all insist in lighting a picture for a portrait as they have been in the habit of lighting it for a bath plate, and they all complain of the plate because they don't get the same results. Now you cannot do it. You



must light the dry plate different. I subdued the high lights and illuminated the shadows. When they became developed we made about six negatives, I think, and they were all very satisfactory. I will bring some of the prints here and show you what can be done with a dry plate properly lighted in a gallery. The trouble is that offensive black and white. It is terrible to me. I cannot endure it. If I were going to say anything to professional men, I would say, don't light your pictures as you have done, and although I have said it it don't make any difference; they go right on and light their pictures the same as they did before, except this particular one that I have been telling you about, and he is lighting them as I like to have them. He has been converted. (Applause.)

The *President*—There was a question proposed to me the other day in reference to getting off silver stains from negatives due to using damp paper. I think Mr. Newton can give us a good remedy for that.

Mr. NEWTON—I am not equal to that. There is nothing but tincture of iodine, so far as I know, that it is of any use in trying. It is silver, and if you can convert it into an iodide or chloride and dissolve that off with cyanide or hypo, you can eliminate it; if you cannot convert it into iodide it is a very difficult thing. I have worked at that problem a good while.

The *President*—The stain I speak of was no color apparently. It seems to be a sort of thickness added to the film. The silver has come off of the paper.

Mr. NEWTON—Not colored at all?

The *President*—Not colored at all.

Mr. NEWTON—It is albumen then.

The *President*—By reflected light it looks like silver, and it came off of the paper where the crease or hinge on the printing frame is.

Mr. NEWTON—The surface came off?

The *President*—No, not that. The paper was damp apparently, and the silver—a portion of it—came off from the paper and adhered to the film of the negative.

Mr. NEWTON—Where you have got subchloride of silver it is not soluble. You could not convert that into an iodide.

The *President*—The only remedy I have seen is to take a solution of cyanide of potassium and run it over with a camel's hair brush. I think, as Mr. Newton does, that the color is irremovable if it is caused by insufficient fixing.

Mr. NEWTON—The best thing that you can use is to put it in a solution of bromide of cop-

per and bleach it pretty well, and then thoroughly wash it and put it in a solution of iodide of mercury, and you can get a good deal of the color out in that way.

The *President*—I saw a very good method of stripping films from plates or negatives when no substratum for promoting it had been put on the plate. It is proposed to take one part of hydrofluoric acid to sixty parts of water, first covering the plate with a solution of gelatine dipped in chrome alum. Then you immerse the plate in a solution of hydrofluoric acid, and the film will come right off and be pliable and tough.

Mr. Fairman, one of our former members is with us this evening, and has brought two or three specimens of photographs taken by lightning during a thunder-storm. Some of them show very plainly the effects of the lightning. The photograph, on which there is a white house, he says is exposed to about thirty flashes altogether. I do not know what the developer was that was used, but I presume it was a potash or soda developer.

Mr. J. P. BEACH—Were those pictures taken in the day-time or night-time?

The *President*—They were taken at eleven o'clock at night.

Mr. FAIRMAN—I have some that I took up in the Catskills that are very good. I did not know as much about developing then as I do now. If I had, I could have brought those pictures up much clearer.

Mr. Beach then spoke of a proposed excursion on the Passaic River to occur on the 20th inst., and invited members to join it. Lunch was to be provided by *Secretary* Granger at his residence, and the party was to number eight.

On motion, the meeting adjourned.

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## Bibliography.

THE following notices are of books that have been upon our editorial table for some time, but until now we have not had an opportunity to find a place for them in our columns owing to the pressure of other matters.

BURTON'S MODERN PHOTOGRAPHY. By W. K. Burton, C. E. London: Piper & Carter.

This is an elementary little treatise on photography, suited to the wants of amateurs. It was originally a series of articles written for the *Photographic News*, which have been revised and enlarged by the author and published

in book form. It is about 12mo in size and contains 126 pages of closely printed matter. There are nineteen chapters treating of the selection of apparatus, the uses of the various chemicals, the uses of lenses, development, intensifying, printing, and all the other operations necessary to produce a good photograph. Mr. Burton's reputation as an amateur is of the highest order, and the book throughout reflects the results of practical experience and a desire to help the beginner in the art.

DRY PLATE MAKING FOR AMATEURS. By George L. Sinclair, M. D. New York: Scovill Manufacturing Company.

This is a reprint of articles communicated to the *Photographic Times* by this well known Canadian amateur, and gives simple directions for the manufacture of dry plates to those who care to try their hands at this interesting, but somewhat troublesome, phase of practical photography. The volume is large octavo in size and contains 28 pages of neatly printed matter, treating of the emulsion, washing, melting, rapid emulsions, gelatine, preparing the glass, and coating.

LA PHOTOGRAPHIE EN BALLON. Par Gaston Tissandier. Paris: Gauthier-Villars.

In the shape of 45 large octavo pages, the author gives an account of the various aerial expeditions that have been undertaken with a view to taking photographs of the country below, while sailing through the air in a balloon. Beginning with the experiences of M. Nadar, in 1858, he speaks of the work of La Montain and Allen during the American Civil War in 1862; the captive balloon of Henri Giffard at Paris in 1878; the attempts of M. Triboulet in June, 1879; the experience of M. Paul Desmares in 1880; the photographs obtained by Mr. C. V. Shadbolt at Blackheath, near London, in 1883; the panoramic apparatus of M. Triboulet, used in 1884; the ascent of himself and Jacques Ducom in June, 1885, over Paris; that of M. Pinard at Nantes, in the same year; and the voyage of M. A. Weddel at Paris, in October, 1885. The book is full of the most interesting and entertaining experiences, and contains very clear accounts of the difficulties encountered by the aeronauts in their various expeditions. Several full page illustrations, including a photographic frontispiece, give an idea of the appearance of the country as seen from a balloon. These are reproductions either direct or indirect, of the various photographs obtained. Numerous woodcuts give details of the construction of the ballon car and the

disposition of the cameras. This phase of applied photography will undoubtedly lead to a revolution in the production of maps and charts of cities and towns to be used for military purposes, and the interesting volume of M. Tissandier gives an excellent idea of the work that has been already accomplished in this direction.

AGENDA DE L'AMATEUR PHOTOGRAPHE. Par Francois Veynes. Paris: J. Michelet.

This is a neat little year-book specially adapted to the wants of amateur photographers. Brief articles appear describing the various operations in the field, and the dark room. Many useful formulas are given and every alternate page is left blank for notes. The size of the volume is about 12mo, and it contains 180 pages. It is a very useful little volume to have around the photographic laboratory.

"Yes, Sam, I got home late agin de odder night, an' my mudder she say, 'Chile, whar you bin out so late agin dis yere night?'"

"I'se been out callin' on a lady," I says.

"Well, chile, why you don't come home 'fore midnight?" she says.

"Kase I couldn't git away before. Kase de lady were a settin' on my hat, an' I was too much of a gemmen to call her 'tention to de circumstance," I says.

"Well, now, honey," she says, "jis look-a-yere, and you 'member dis now, or you git leff out. Next time you visits a lady jis keep your hat off 'yo lap."

FRANK B. WILSON.

## What Our Friends Would Like to Know.

*N.B.—We cannot undertake to answer questions of a technical character except through the columns of the BULLETIN. Correspondents will please remember this.*

Q.—A. R. sends a flat print, and writes: Please tell me, through the columns of the BULLETIN, what is the matter with my silver prints. They all appear like the one I send you, without pure black tone. The climate is damp here. I fume thirty minutes, and my bath is seventy-five grains strong.

A.—The trouble with the print sent is that it has not been printed deep enough, and is decidedly over-toned. Print deeper until the

proofs appear almost spoilt, then proceed to tone in the usual manner. Your silver bath is rather strong if it is all silver nitrate. Sixty-five grains is considered a strong bath by most photographers.

Q.—W. D. C. writes: I am a reader of your valuable magazine, but have not noticed anything in regard to the treatment of old printing baths. I work my bath and toning after Mr. O'Neil's formula, and consider it the best of any. Now I have quite an accumulation of old printing baths. Is there any better way, or, in the end, a cheaper way, than to send this as old waste to the refiner's and get good silver in return? What shall I use to evaporate the acid from my gold solutions?

A.—The best way to save the silver in your old printing baths is to precipitate it with salt and send it to a refiner. It is much too troublesome a process to work unless you have special apparatus in the shape of refining furnaces, etc. For evaporating your gold solutions use porcelain dishes; you can get them from our publishers.

Q.—J. A. M. writes: I tried to clear up a daguerreotype by placing it in a hypo solution; but I left it too long and it has become clouded like a partly fixed ferrotype. What can I do with it to clear it up?

A. We do not know of any way of clearing such a plate without injuring the picture; you have probably sulphurized the silver surface from a decomposition of the hypo, sulphide of silver being formed, which is insoluble in everything that will not also act on metallic silver.

Q.—E. L. R. writes: I am about to try and make an emulsion for coating some old plates. There is one thing that bothers me, however, and I write you for information. I intend to use the method given by Dr. Eder, in his book, "Modern Dry Plates; or, Emulsion Photography," on pages 91 and 92. The directions say to use 30 to 45 grams of gelatine. Now, there is such a difference in the two amounts that I am all at sea in regard to the quantity to use. I suppose it makes a difference what kind of gelatine is used. I bought my gelatine and it bears a label like the one inclosed, except that the number is 188, and in place of "Netto Gr" is "Hart." If you will kindly advise me as to the amount best to use in making the emulsion named you will confer a great favor.

A.—We should use thirty grams of gelatine for making the emulsion as given by Dr. Eder. The gelatine of which you send the cut of package is all right, and is the best to use.

Q.—E. H. B. writes: Being a reader of the BULLETIN, I take the liberty of asking a few questions, and trust you will answer them and oblige. In a back number of "Mosaics" there was given a formula for making a chloride of gold solution and toning bath, which reads like the following: "Put in a fire-proof glass flask 2 pennyweights of gold-foil or dentist's waste, and add 2 drams hydrochloric and  $\frac{1}{2}$  dram nitric acid mixed with 1 ounce water; heat moderately till gold is dissolved; add powdered chalk as long as it is dissolved, and leave a slight excess; boil strongly for fifteen minutes, taking care there remains an excess of chalk; let cool and add 24 drops strong solution chloride of lime and 1 ounce acetate of soda; decant into a bottle and wash out all the gold from the chalk by repeated small additions of water until you have 12 ounces. To make toning bath use 1 ounce gold solution and 1 quart water; when using again add 2 drams for every two or three sheets of paper." I have made the above many times and found it good, but on several occasions could not get "dentist's waste" and used coins instead. Last week I used a \$.50 gold piece, and, using the acid in the above proportions, I had to put on more to cut up the gold, and as it weighed 64 grains I used 30 drops chloride lime solution and  $1\frac{1}{4}$  ounces acetate of soda. I "boiled strongly" for 20 minutes, and used plenty of chalk and decanted to 12 ounces water. I find after it has stood several days the gold has partly precipitated, and I wish to know what caused it and how I can remedy it. Did I use too much acid, chalk or acetate of soda, or not enough? Will the addition of any or either of above, or boiling it longer, redissolve the precipitated gold? Or did I use too much chloride of lime? As I wish to avoid a recurrence of any such mistakes in the future, I would feel thankful for any information on the above.

A.—The standard gold coin of the United States contains only ninety per cent. of pure gold, the other ten per cent. being copper, with more or less silver, sometimes none. Therefore you cannot make a pure gold solution direct from gold coin. It is probable that the deposit you mention is copper. Try to dissolve a little of it in a small quantity of strong nitric acid, and then add a little water and enough ammonia solution, a few drops at a time, to make it smell strongly. If the solution turns blue it is copper. Let us know the result.

Q.—G. G. B. writes: Please let me know the best formula you know of for reducing strongly developed negatives on dry plates?



A.—The green crystals from old ferrous oxalate developer, which consist of ferric oxalate, are strongly recommended for this purpose. Take ferric oxalate half an ounce, hyposulphite of soda quarter of an ounce, and water one ounce, and place the dense plate in the solution, removing from time to time to see if the required density has been obtained, then wash thoroughly. The solution sets rapidly, and the plate should be watched so that the proper point may not be overreached.

## Views Caught with the Drop Shutter.

HENRY G. THOMPSON, of the late firm of Douglass, Thompson & Co., more recently with Sweet, Wallack & Co., is now with the firm of N. C. Thayer & Co., and would be glad to have of all his friends call and give him a vice-presidential shake.

MISS ROSA BLESSING, the charming daughter of Mr. and Mrs. J. P. Blessing, was lately married to Mr. Henry Fenge, of the firm of Blessing & Co. The marriage took place in Baltimore, and was a very handsome affair. The church was crowded with the friends of the bride and groom, although the admission was by card only. The BULLETIN sends congratulations.

THE recent destructive fire at the quarters of our good friends BUCHANAN, SMEDLEY & BROMLEY, of Philadelphia, showed what those gentlemen were made of, for in less than twenty-four hours they were doing business at another location and in full running order. In a unique circular, which is printed on paper

with edges that are made to imitate a scorched appearance, these enterprising merchants announce that they sustained considerable loss from the fire, not being fully insured, but that they are fitting up 1030 Arch street, Philadelphia, as a palace stock house; in the meantime they are doing business at 714 Arch street. We regret to hear of their losses and congratulate them upon the rapidity with which they have so soon got into running order again.

OUR publishers inform us that the new book by Mr. E. M. Estabrooke, the well-known writer on the ferrotype, will soon be out; and promise us something useful and instructive to every photographer. The title of the new volume is "Photography in the Studio and in the Field."

MULLETT BROTHERS, the genial and enterprising photographic merchants of Kansas City, send us a handsome catalogue of 200 quarto pages that is filled with a host of fine illustrations of frames, backgrounds, accessories, cameras, lenses, etc. We are glad to see that the increasing business of these industrious gentlemen calls for such an extensive catalogue of their merchandize.

S. T. BLESSING, of New Orleans, La., and Dallas, Texas, sends us his handsome octavo catalogue of nearly 100 pages, which is filled with the prices of his extensive stock of photographic requisites, and is finely illustrated.

THOMAS H. MCCOLLIN, of Philadelphia, sends us his handsomely illustrated catalogue of 200 octavo pages. It is filled with everything that the photographer needs.

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IVES, PHILA.

NEGATIVE ON  
STANLEY PLATE WITH  
DALLMEYER W. A. LENS.

IVES PROCESS.

"WERE MY CRAYON A ROD,  
A FISH WOULD I DRAW."

BY  
PROF. E. L. FRENCH,  
AURORA, N. Y.



# ANTHONY'S Photographic Bulletin.

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Prof. CHARLES F. CHANDLER, Ph.D., LL.D., *Editor.*

ARTHUR H. ELLIOTT, Ph.D., F.C.S., *Associate Editor.*

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NOVEMBER 27, 1886.

Vol. XVII.—No. 22.

## FERROUS OXALATE DEVELOPMENT.

SOME time ago we made some comments upon development with pyrogallol, and promised to review the ferrous oxalate method at a later period. We now redeem our promise, and will endeavor to give our readers an idea of what has been done in this direction by recent experiments.

One of the advantages claimed for the ferrous oxalate method of developing dry plates is that the resulting negatives are less liable to be stained than when pyrogallol and alkali are used. It is perfectly true that these pyrogallol stains can be eliminated by the use of alum, or they may be prevented by the judicious use of the pyrogallol developer. Nevertheless the user of oxalate claims that the use of alum solution is an extra operation that is unnecessary, and that in the most careful hands blameless negatives without the use of alum cannot always be obtained with certainty. Another objection to the use of alkaline developers is the tendency to frilling exhibited by many plates that are otherwise very good; but on this point we do not think much stress can be laid, for it has been found necessary to use chrome alum in the ferrous oxalate developer, in order to prevent frilling when this method of development is used. Dr. Vogel, in one of his recent letters to the BULLETIN, speaks of the use of this chrome alum in the ferrous oxalate developer in Germany, and gives a formula.

But quite recently Mr. J. Gadiche, of Germany, has been experimenting upon the relative merits of pyrogallol and ferrous oxalate in the production of negatives. To compare these two methods, he used a pyrogallol developer, with the following formula:

### No. 1.

Pyrogallol.....	3 grams.
Sodium sulphite.....	20 “
Water .....	40 “

### No. 2.

Potassium carbonate.....	5 grams.
Water.....	40 “

To develop he took two parts of No. 1, four parts of No. 2, and thirty-six parts of water.

The ferrous oxalate developer was that ordinarily used: one of saturated ferrous sulphate solution, acidified with citric acid, to three of saturated potassium oxalate solution.

These developers were applied to two portions of a plate cut up into pieces for the purpose, and exposed for the same time under the same sensitometer. As a result of the development, both portions of the plate showed the same number, indicating that the pyrogallol does not bring out anything more than the ferrous oxalate; but the character of the negatives was different. By further experiments, Mr. Gadické found that the pyrogallol gave a more correct negative than the ferrous oxalate, the latter making the high lights too hard. In portrait negatives he found that those made with pyrogallol were much more harmonious in tone than those made with ferrous oxalate. It would thus appear that for objects having fine gradations of light and shade, the pyrogallol development is to be preferred, and this agrees with our own experience. In the case of objects having sharp contrasts, ferrous oxalate would seem to be indicated, and the results that we have seen produced by this method, and that were to be admired, were of just this character. The most notable examples of the good use of ferrous oxalate development that we know of, are those excellent views of steamers made by Dr. Higgins, specimens of which formed illustrations of the BULLETIN some time ago. Quite recently we have seen some views of ferry-boats around New York that are of the same sharp character. In all these cases the contrasts of light and shade are well marked, and the results obtained by the ferrous oxalate development fully bear out the conclusions arrived at by Mr. J. Gadické in Germany.

As a kind of assistance to the ferrous oxalate developer, a preliminary treatment of the plate to a bath of hyposulphite of soda has been recommended. This salt has also been suggested to be used as an addition to the developer. Those who have used this latter method say that no difference is observable in plates developed both with and without hyposulphite. On the other hand, those who have used a preliminary bath of hyposulphite, say 1 in 3,000, claim that there is a most decided advantage in its use.

In the use of sodium hyposulphite in the ferrous oxalate developer, a very important fact must be taken into consideration, and that is, a mixture of ferric oxalate and sodium hyposulphite acts as a very powerful reducer of density. Hence old oxalate developer to which this salt has been added will tend to give thin negatives. This fact may be the cause of the failure of those who have used the hyposulphite as an addition to the developer, to see any difference between the negatives made with and without this addition. The developer may have been too old, containing ferric oxalate, and the hyposulphite would then fail in its function as an accelerator.

For beginners in photography, and for full exposures, there is no doubt much to be said in favor of the ferrous oxalate developer, especially with rapid plates like the Stanley. For in this latter case a weak ferrous oxalate developer is much more manageable than alkaline pyrogallol. But for rapid exposures and the development of correct negatives, pyrogallol has yet to see a rival.

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I HAVE examined nearly all the photographic periodicals of America, and have at last come to the conclusion that the BULLETIN is superior to any.

G. E. VALLEAU.

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*All communications for the columns of the BULLETIN should reach us on Monday preceding the day of issue, to insure their publication at that time.*

## EDITORIAL NOTES.

IN the Exhibition of the Photographic Society of Great Britain, it has been noted that the number of pictures in which figures and groups of figures play a prominent part is greatly in excess of that of last year. In the class of portraits, Fritz Einlender, of Germany, has a set 18 x 22 inches each, which have been much admired.

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THE Edinburgh International Exhibition also had spaces devoted to photography, where examples of carbon pictures, platinotypes, and other forms of printing were exhibited. Mr. H. P. Robinson, of Tunbridge Wells, and Geo. West & Sons, of Southsea, we note as among the exhibitors; the former with his admirable compositions, and the latter with their renowned yacht pictures.

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THE Special Photographic Exhibition in Glasgow contained a number of exhibits that are of historic interest. Fac-similes of Thomas Wedgwood's illustration of Niepce's experiments with bitumen; a number of daguerreotypes; a series of calotype prints and paper negatives by Fox Talbot, were among the most notable.

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IN the last number of the *Photographische Mittheilungen*, which we have received, we note two excellent lichtdrucks, illustrating the use of orthochromatic plates for landscape photography. The subject is the castle and church at Starenburg. One view is taken with an orthochromatic plate (azalin-erythrosin), while the other is upon an ordinary plate. The difference in the two pictures is most remarkable. With the ordinary plate, the sky, the foliage, and the distant landscape have very little detail; while in the case of the orthochromatic plate the sky shows pretty cloud effects, the foliage is full of detail, and the view of the distance is clear and well defined; in fact, in the latter case we have a brilliant picture, while the former is the reverse.

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AT the recent meeting of the National Academy of Sciences in Boston, Professor E. C. Pickering gave an account of the work done with the Draper Memorial Fund in taking photographs of star spectra. He has used the eleven-inch telescope that belonged to Dr. Draper, and which has two prisms of glass eleven inches square in front of the objective. These prisms are considered marvels of skill in the optician. The exposures to obtain the spectra of the stars varies from five minutes to one hour in duration, and the bright and dark lines in the photographs obtained are numbered by hundreds, showing the accurate construction of the prisms.

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AT an exhibition with the lantern on November 18th, at Association Hall, New York City, the Society of Amateur Photographers showed a number of beautiful slides received from England under the auspices of the International Exchange. The pictures were certainly very beautiful, and called forth much applause from the audience. The musical part of the entertainment, furnished by the Brooklyn Harmony Club, was thoroughly enjoyable; and the readings of Mr. Burdett were excellent and well rendered. The exhibition illustrated in a very admirable manner the progress of amateur photography, and the beauty of the results obtained in artistic hands.



THE news has just arrived from Paris that M. Pictet and Dr. Raoul Duvernay have succeeded in making mirrors that will register the objects reflected upon their surfaces, and that the images can be reproduced at will at any time afterwards. The method is said to involve the use of selenium, but the *modus operandi* is kept a secret. It is probable that this is accomplished by the use of the effect of light in changing the electrical conductivity of selenium, in the same manner that photographs can be reproduced in outline at the end of a line of wire.

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#### ABOUT THE NEW SIZE OF ALBUMEN PAPER.

*To the Editors of the BULLETIN.*

I HAVE often wondered why we are confined to the same sizes of plates and paper, when the shape and sizes of pictures are constantly varying. We now make tall, narrow panel pictures, but on the old style broad plates at great waste, while dry plates are sold by so much the square inch. In tintypes the same forms and sizes are sold as when all pictures were put in cases, often at the same disadvantage as in dry plates. Also in albumen paper the same one size, 18 x 22, has continued for years. You could only get sizes below by dividing that size up, and almost no sizes above; yet of late years photographs much larger have been made at great inconvenience and on inferior paper. Also in cutting up the larger sizes of portraits and landscapes, the 18 x 22 size often cuts to great disadvantage, especially in cabinets, it often being necessary to cut them across the grain or lose paper, and then the unpleasantness of seeing some in the same order expanded broadwise and others lengthwise making a difference too great to pass without notice, yet which could only be avoided by great care.

These thoughts have been suggested by a new size of paper which the Messrs. Anthony, with their usual enterprise, have recently put upon the market, about 20 x 24, as large as any purely photographic portrait ever ought to be taken, and which cuts up nicely into twenty cabinets all one way of the paper, a great comfort in practical working.

Those who have silvering dishes only large enough for 18 x 22 sheets, can easily divide these, and get ten from each half sheet. Do not use the largest forms, but the size which leaves a little margin when mounted, and looks better any way than when the mount is filled to the edge. The increased ease and convenience in using the new size makes it well worth a trial, and once tried you will not relinquish it, but will feel grateful to them for offering it to the fraternity, and perhaps to me for thus suggesting its use.

Yours fraternally,

E. K. HOUGH.

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#### ON THE INCORPORATION OF THE PHOTOGRAPHERS' ASSOCIATION OF AMERICA.

BUFFALO, October 27, 1886.

*To the Editors of the BULLETIN.*

DEAR SIRS,—Until you called my attention to it, I was not aware that there was a committee appointed to revise the Constitution and By-Laws of the P. A. of A. On examining the stenographic report, I find the names of the following gentlemen appointed on that committee by President POTTER: Messrs. G. Cramer, dry plate manufacturer, St. Louis; Gayton A. Douglass, photographic stock dealer, Chicago; Ranger, manager burnishers, Syracuse; H. M. Bellsmith, representative Eastman Dry Plate and Film Co., Rochester; C. Gentilé, editor *Photographic Eye*, Chicago; J. Landy, photographer, Cincinnati; G. M. Carlisle, Provi-

dence; and Brand, photographer, Chicago. Since it is so nearly in the hands of the dealers, why not change the name, and call it the Manufacturers' and Dealers' Photographic Association of America?

To even it up, I think Mr. David Tucker, President of Merchants' Board of Trade, should appoint a committee of photographers to arrange their business, which might be of inestimable value to the photographer.

Very truly yours,

H. McMICHAEL.

[We received this letter before our last issue was published; but it was mislaid until now.—Eds.]

### THE PHOTOGRAPHERS' ASSOCIATION AND ITS MANAGEMENT.

BUFFALO, N. Y., November 5, 1886.

*To the Editors of the BULLETIN.*

DEAR SIRS,—Many things are being said concerning triennial exhibitions; cost of conventions and their management; the giving of medals; and radical changes in the financial policy of the Photographers' Association of America.

Having been closely connected with the fraternity the past two or three years, perhaps a few facts gathered from my experience would not be out of place at this time.

Let us consider first the reduction of fees and dues of members, together with the price of floor space to dealers and manufacturers.

*President POTTER* recommends a reduction of the initiation fees to two dollars for proprietors and one for employees (annual dues one dollar each); with the exhibit of both art and stock department to be open to the public for the three last days, admittance twenty-five cents.

Taking the last two conventions as bases, let us compare the receipts with the expenditures and see the result.

At the Buffalo convention 194 new members paid \$5 each, in all \$970; 431 members paid dues \$2 each, \$862. With floor space of over \$2,000, we have a total of over \$4,000. Receiving from Mr. Armstrong, the former Treasurer, \$600, we have in the treasury, \$4,612. Deducting the expenses of the convention, \$2,718, we have a balance in the treasury of over \$1,900, making a net gain of over \$1,300.

Now reduce the floor space one-third, and we have about \$1,333. The amount of dues of 194 members at \$2 each is \$388, and 431 members at \$1 each, \$431. Admitting the public at 25 cents each, \$200, we have a total of about \$2,353. Add to this the \$600 in the treasury, and we have \$2,953.

With expenses amounting to \$2,718, there would be a balance of \$235, rather a small amount to start the St. Louis convention.

At St. Louis the receipts from 321 members at \$5 each is \$1,605; dues paid by 335 members, \$2 each, \$670; received from public admissions, \$127; and from floor space, \$1,628; making a total of \$4,020. The expenses—\$3,444—deducted from this, leaves a net gain of \$576, or about \$700 less than the Buffalo convention. This added to the money in the treasury gives \$2,500 to the credit of the association.

Now let us make a reduction on the cheap scale for St. Louis: 321 new members at \$2 each, \$642; 335 members at \$1 each, \$335; admissions from the public \$127, making a total of \$1,104. Add to this the amount in hands of Treasurer from reduced rate in Buffalo, and we have \$1,425.

Taking from this the expenses of the St. Louis convention, \$3,444, the association would be in debt over \$2,000.

Shall we return to the financial policy of the brethren who had in charge the management of the old N. P. A., and fill our photographic journals with the cry of give, give? For our national association must have assistance or perish.

Many will remember the time when our lamented Rulofsohn stood upon the auction block in the city of Chicago and sold pictures, frames and other articles donated by the members to pay the indebtedness and uphold the honor and dignity of the fraternity. But all of no avail; a few more struggles and the old N. P. A. was a thing of the past and heard of no more.

Or shall we continue a policy which has made this P. A. of A. self-sustaining; an honor to the craft; and, if rightly managed in the future, cannot but have a great influence toward the elevation and advancement of photography.

Any change in the management of the association should be approached with due thought and caution, so as not to interfere with its workings.

The association, if carefully conducted, might be more liberal to the dealers with advantage to both itself and them.

I believe all help necessary for the handling and sale of goods at our conventions should be admitted free. As a rule, they are of no benefit to the association and have no interest in it.

Then, as to the price of space, it seems to me the charge per square foot should be regulated according to circumstances.

The dealers are willing to contribute liberally to the support of the association when all have an equal footing and are governed by sound business principles, but, after they have paid their honest debts, they do not want to be hunted down with subscription papers as if for a charity organization for some fund that can and ought to be paid out of the treasury.

I am a firm believer in the giving of medals. There is something about them that inspires a man to greater efforts. The soldier on the field of battle faces death a thousand times for honor to his country and himself, and the medal on his breast tells the story of his victories to the world.

Our friend Mr. J. F. Ryder, says they are begetters of jealousies, destroyers of harmony, and bones of contention over which to wrangle. When I look on his cabinet cards and count the many medals, I cannot but think what a destroyer of harmony he must have been. No, brother Ryder, give the boys a chance to win laurels like those you have so honorably won.

Some say conventions are too expensive for the returns they afford. We may count the costs to attend them, but who among us shall estimate the value of our association to its members or to the future of photography.

It would be ungrateful in me not to acknowledge the assistance and pleasure derived from these yearly meetings, and I hope each member feels that he too has acquired some good from attending.

Nothing would contribute more directly to bring about the golden age of this association than the harmony and persevering exertions of its members. "But we must take the current when it serves."

Trusting to the indulgence of the readers, and feeling sure of the consideration of the critics, who, while they find many faults, are at the same time conscious of the difficulty of doing such a subject justice,

I remain, very truly yours,

H. McMICHAEL.



## FORTY YEARS BEHIND THE CAMERA.

BY A. BOGARDUS.

[Read before the Photographic Section of the American Institute.]

Go with me on the morning of the 17th of October, 1846, and you would have seen a young man hang at a door a small frame, containing perhaps half a dozen one-sixth size daguerreotypes. Go upstairs. A carpet; small table; six chairs, on the back of one of them a clamp head-rest; a quarter-size camera on a three-legged stand; a side screen; a shelf with five or six specimens—this constituted the daguerreotype gallery. The first day I made one picture; under a terrible degree of excitement I was able to produce an impression. I would give considerable to see that picture. What became of the picture I know not, but the man left the country soon after. I next heard of him in Australia, and finally heard of his death on one of the South Sea Islands, near Madagascar. Whether the picture I made of him was the cause of his death, eternity may reveal.

Some days the chemicals made me lots of trouble. I could not get a good picture, and I often carried the failures to my teacher, and he would generally say it was a "combination of circumstances;" in fact, I always thought he was just as much in the dark about the cause as I was. But "combination of circumstances" was about all I could get in the way of information, and I have since seen many, many attempts at a picture that I thought was spoiled by a "combination of circumstances."

At about this period some very fine pictures were produced. This city contained some of the best workmen in the world. European work could not equal it. At the first World's Fair in London, the prize was carried off by the New York men. I mention some of the most prominent men of that day in New York: Gurney, Lawrence, Anthony, Edwards & Clark, Plumb, Haas, Becker, Brady, Whitehurst, Insley, Weston Brothers, Meade Brothers, the brothers Beale, Lewis, Bogart, Walsh, Fredericks, and others whose names I do not recall.

In my opinion the pictures made by Mr. Jeremiah Gurney were the finest work of that day. You will remember it was one picture we made (not a dozen), and each of the several pictures turned out was shown to all the friends of the sitter, and was criticised by all, and woe to the man that failed to turn out a picture that would not bear the closest inspection. It required great care, as well as skill, to keep everything in order, and to know how to use them. A failure in any part of the delicate process, and your picture was imperfect. The nature of the chemicals changed with every change of weather. If your room was too cold, you could not work; if too hot, the chemical vapors flashed, and the results were bad.

One day I had a very singular experience. I was called to go several blocks to make a picture of a sick lady. On such occasions I always coated half a dozen plates, placed them in the dark box, and, with my small camera under my arm, and carrying my mercury bath, I arrived at the house, asked for the use of a closet or pantry as a dark room, set up my mercury bath, and under it the lighted alcohol lamp. The mercury was always carried in a small bottle with ground stopper, and emptied into the bath before using. On this occasion I had made and developed over the bath three or four plates. Satisfied, I was packing up to go back to my gallery, and what was my surprise to find I had the mercury still in the bottle. I had not put it in the bath at all. Where the impressions came from was a mystery. It was explained by the fact that enough mercury

had remained in the pores of the iron bath to develop the three or four plates; but I never forgot to put the mercury in the bath after that.

There was great competition for the highest prize at the fairs of the American Institute. Obtaining the prize was a great advertisement, and sure to bring a large business if the medal was exhibited as a trophy.

See how times have changed. Then the best workman was patronized; now the man who works the cheapest has the rush.

Prices ranged, for the one-sixth or medium size, from \$5, \$3, and \$1; and there were in that day cheap Johns, who made pictures for 50, and even 25 cents each. They were called "blue bosom operators." These cheap men coated a plate mechanically, and placed the sitter on a chair and fired away, without regard to position, light or shade. Not knowing how to use their chemicals, the shirt bosom, which should come out white, was blue; hence the name, blue bosom operators. The race is not extinct.

An ignoramus once came to me and said he had taken the colors. If there are any old daguerreotypists here, they will remember a plate too lightly coated and cold in tone looked yellow, because it was not decently manipulated. This individual had such a plate, and, sure enough, it looked a dirty yellow. He said a man came to have his picture taken that had the jaundice, and, said he, "there it is, just as yaller as saffron." He thought he had produced the colors well; perhaps he came as near to it as anybody else ever did.

The one-sixth, or medium size, was the most in use; a quarter size was pretty large, and a half size was an unhandy thing to handle. But when it came to whole size, or four-fourths ( $6\frac{1}{2}$  by  $8\frac{1}{2}$ ), that was enormous, and required great care in handling. A person whose hands perspired had better not attempt to use them. The least particle of dampness on your fingers, and you got streaks. Good operators often washed their hands in alcohol before using a large plate.

The photograph soon came into favor, and the daguerreotype was discarded. I always regretted it, as they are, when well made, the best production of the camera, and (I know what I am saying) are perfectly durable. If they are tarnished, they can be cleaned as good as the day they were made, always provided some very smart person has not rubbed them out in trying to clean them with a pocket-handkerchief. I have had many brought to me in that condition, and the parties were ready to take an oath that the picture had never been touched; but I have made too many not to see at a glance the effect of the attempt to clean them. I have made many people happy in restoring the old pictures, which they had thought gone forever. I recollect a half plate being brought to me by a lady. It was completely covered with a dirty-looking film, but no attempt made to clean it by rubbing. I saw in an instant that it could be restored, and applied the proper solutions. It came out as bright as if just taken. The lady was speechless, and fainted. She had not seen the picture of her deceased husband in years, and there he was as if brought from the dead.

I have made pictures of many of the grandfathers of the present generation, and I must say the grandfathers and grandmothers were not so hard to suit as the grandchildren are. They were satisfied to have the picture a likeness; the art of retouching had not been discovered then.

After a long experience, I find the truth of the old adage, "many men of many minds," and the author of that might have added women too. People see with different eyes. One pronounces the likeness perfect; another would never

know it. A lady sits with lace gracefully arranged around her head. Some pronounce the arrangement beautiful, and another says, "Was she such a fool as to wear that thing?" We know there are people who are color blind; I think there are people who are likeness blind. I knew one man, whose family I often pictured, who did not know his own wife's picture, and said a picture of his boy looked like any other boy. His own family said he could not tell a likeness of anybody.

How different the value of a picture by different people. Some seem never to care enough about even the picture of a father or mother to take care of them.

While spending some days last summer in a village not far from New York, I was invited to visit a widow lady in the vicinity; she wished to see me. On calling on her, she brought out a box about two feet square. It was filled with (as she called them) her treasures. There were some thirty or forty daguerreotypes of my making—her husband, father, mother, brothers, sisters; and all of them dead. She valued them above price.

(To be continued.)

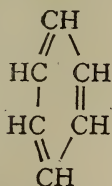
### PYROGALLOL.

By SPENCER B. NEWBERRY, *Cornell University.*

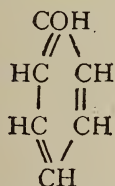
[Read before the Society of Amateur Photographers of New York.]

THOUGH pyrogallol, or pyrogallic acid, is one of the most familiar substances with which photographers have to deal, yet but little is generally known concerning its chemical nature. In view of the great usefulness of the substance, and the beautiful results which it can be made to yield, it may be that a brief sketch of the origin, mode of manufacture, and chemical properties of pyro will not prove uninteresting to this society of students of the science as well as the art of photography.

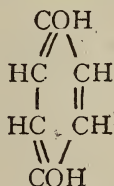
Pyrogallol is a derivative of benzole, and is closely related to phenol, or carbolic acid, and also to hydrokinone. The relations in which these substances stand to each other is shown by their graphic formulas:



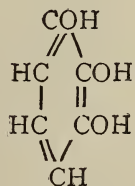
Benzole.



Phenol or Carbolic Acid.



Hydrokinone.

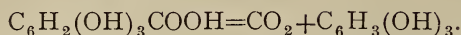


Pyrogallol.

It will be seen from this diagram that phenol consists of benzole in which one atom of hydrogen attached to a carbon atom is replaced by the group "hydroxyl," or OH; in hydrokinone two atoms of hydrogen, and in pyrogallol three atoms, are replaced in the same way. It is not, however, from benzole that pyrogallol can most conveniently be prepared. An abundant source of supply is found in nature in the gall-nuts, or rounded swellings produced by the sting of an insect on the twigs of the *Quercus infectoria*, a species of oak common in Syria and Asia Minor. These gall-nuts are collected and exported in great quantities from Smyrna and Aleppo to all parts of the world, principally for use in the manufacture of writing-ink. They contain a large percentage of tannic acid, or digallic acid, which on boiling with dilute acids splits up into two molecules of gallic



acid. Finally, gallic acid, when gently heated, melts and gives off carbonic acid, forming pyrogallol, according to the equation



Pyrogallol forms white crystalline leaflets and tufts; melts a little above the boiling point of water; and when heated is volatilized and deposited again in feathery masses in the cooler parts of the vessel. This operation is termed sublimation, and is a valuable method of purification of volatile solids, since in passing into the state of vapor the impurities are left behind. Hence the purest pyrogallol is termed "resublimed."

Pyrogallol is not an acid, for the slightest addition of an alkali renders it distinctly alkaline. Rosing states that it does not decompose carbonates, and forms no salts with the alkalies. It is therefore evident that the common name, pyrogallic acid, gives a false idea of the nature of the substance, and that it is no affectation to say "pyrogallol," as all modern chemical writers do.

Pyrogallol—or "pyro," to use a convenient and well-established abbreviation—owes its efficiency as a developer to the great ease with which it may be oxidized and decomposed. In a dry state it remains unaltered in the air, but in solution in water it quickly absorbs oxygen, and is converted into carbonic acid, acetic acid, and brown products of decomposition. Reducing agents prevent this; sulphurous acid, for example, is a well-known preservative of pyro solutions.

Salts of gold, silver, and mercury are readily reduced to metal on the addition of pyro to their aqueous solutions. In the case of silver compounds, this action is greatly retarded by the presence of large quantities of acids, and on the other hand is rendered much more energetic if the pyro be made alkaline with caustic ammonia, potash, or soda, or the carbonates of these alkalies. In fact alkaline pyro will reduce to metal not only the soluble salts of silver, but also the bromide, chloride, and iodide, which are not affected by acid pyro solutions. In the old wet collodion process, the development consisted in the reduction of the free nitrate of silver which was present in excess, and the deposition of the metallic silver which resulted upon the parts of the film upon which the light had acted. For this purpose, if pyro was employed, it was necessary to use a highly acid solution, in order that the deposition of silver should take place gradually; neutral or alkaline pyro would give dense fog at once. In dry plates, however, there is no silver nitrate present, and the development consists in the direct reduction to metal of the bromide and iodide of silver composing the film. To affect this the most powerful developing agents which chemistry can furnish—as, for example, alkaline pyro—may with safety be employed.

Of the various alkalies which have been suggested for use with pyro, ammonium hydrate and the carbonates of soda and potash are most often employed. Sodium sulphite is generally added to the pyro solution to preserve it from decomposition, and to prevent the staining of the negatives which results from the action of oxidized pyro on the gelatine of the film. The preservative effect is also much aided by the addition of a little sulphuric acid to the solution of pyro and sulphite, thus causing the liberation of a small amount of sulphurous acid. Even with all these precautions, solutions of pyro are very liable to deterioration by absorption of oxygen from the air, giving stained negatives, and by far the best plan is, as is well known, to prepare the solutions only in small quantities, and to renew them frequently.

In the hands of the writer the sulpho-pyro-potash developer (suggested, I believe, by your President) has yielded results superior to those obtained by any other formula. There is an exquisite crispness and beauty about the pyro-potash negatives which seems to me to be lacking in those produced by the aid of either soda or ammonia.

Other substances resembling pyrogallol in chemical character, and, like pyro, belonging to the group of polyvalent phenols, are known to have strong reducing properties, and may be used as developers. One of these, hydrokinone, of which the formula is before you, is stated by Captain Abney to be more efficient than pyro, and to give results of equal beauty. Its high price has, however, been an obstacle to its general use. Two "isomers" of pyrogallol (that is, substances having the same composition, but differing in the arrangement of the atoms in the molecule), namely, phloroglucin and oxy-hydrokinone, are stated by Dr. Eder to be less powerful developers than pyrogallol. These differ from pyro only in the fact that the three hydrogen groups are attached to different carbon atoms in the closed chain. Another substance, tetraoxybenzine, which has four hydroxyl groups, and which may yield interesting results, appears not yet to have been tested photographically.

All these compounds act as developers by virtue of the readiness with which they absorb oxygen. It is probable that the developer acts indirectly upon the bromide and iodide of silver, by decomposing water with absorption of oxygen, setting hydrogen free, which in turn takes the bromide from the silver compound, forming hydrobromic acid, and leaving metallic silver. The influence of the alkali may be explained by the supposition that it neutralizes this acid as fast as it is formed. In the action of the developer, however, there is much that is only very imperfectly understood, for we know nothing positive as yet as to the nature of the mysterious, invisible, latent image produced upon the plate by light, which gives the first impulse to the development and determines the chemical reactions which result in the visible picture. Until we know more of these things, we may say that in many points chemists find themselves as much in darkness as other people when they enter the dark room.

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### AN AMATEUR'S EXPERIENCE PHOTOGRAPHING IN THE ROCKY MOUNTAINS.

BY RANDALL SPAULDING.

(Continued.)

FROM Leadville our journey was continued by the Denver and Rio Grande Railroad to Buena Vista, then again by the Union Pacific line up Chalk Creek Cañon to Hancock, the last and highest station east of the Alpine tunnel, whence begins the descent to Gunnison. At Hancock we spent a whole day. The camp lies at an altitude of 11,000 feet, and two or three years ago contained 200 or 300 people. Now the boom is over and barely half a dozen remain. But the region about Hancock is certainly one of the most picturesque spots that we saw during the summer. The floral wealth here is remarkable, and would charm the most obtuse. The monkshood, mertensia, columbine, penstemon and others, are extraordinarily numerous and brilliant. The flowers, tall evergreen forests, and towering mountain peaks, combine to fulfill my ideal of a wild landscape.

The air is clear and cool, so cool indeed that we were obliged to break the ice in the morning before we could wash. Here our cameras did some of their

best work. A walk of three miles upon the railway brought us to the Alpine tunnel, 11,624 feet in height, the highest tunnel, it is said, in the world. Huge snow banks remain about the tunnel during the entire summer.

Here we secured some interesting snow scenes—scenes that are not accessible to most of us in the month of August. I should remark here that the railway company does not pretend to keep the road open for more than a few months in summer, and even then the amount of travel over this road is small.

The next day, when west of the tunnel, the conductor kindly stopped the train for us to photograph the so-called "Palisades," on condition that we sent one to each employee on the train, five in number. I remarked a few days ago to an amateur photographer that I had just sent away a number of pictures, with which I had redeemed my promises. Said he: "The difference between you and me is that I promise a good many pictures, but never send them." Such a sentiment cannot be too strongly condemned. If we cannot be amateurs and honest men, we ought to find our recreation in some other way.

Gunnison is dead. Since my last visit, three years before, it seems to have rapidly declined. Here occurred one of our funny experiences. We camped for the night in a box car partly filled with baled hay, and were soon fast asleep. But during the night a freight train came along and set about adding to its number from the long line of cars that stood upon the siding. We were trundled, in the most alarming manner, up and down the long side tracks, so that I had hard work to keep my companions quiet, for I had full faith that our car would not be taken away. So it proved, and after a while we were permitted to sleep again.

Our photographic outfits were stored during the night in the railway station.

On the through line of the Denver and Rio Grande Railroad, the Marshall Pass is probably the object of chief interest. There could be nothing more picturesque than the scenery that we had passed through between Denver and Gunnison, but there is in the lofty and stately curves of the Marshall Pass an epic grandeur that I have seen nowhere else along the railway lines of Colorado. In such scenery the camera is inadequate, and fails to yield any satisfactory results.

In Cañon City, at the eastern end of the Royal Gorge, or Cañon of the Arkansas, we stopped and spent the night. The next day was clear and sunny. A walk of ten miles back through the Gorge brought us to Parkdale, a small station where we could take the afternoon train and proceed again eastward. The engineer of the "dummy" engine that served in the making up of trains was induced by the promise of a picture of his engine to carry us a mile toward the entrance of the Gorge.

Owing to the height and narrowness of the cañon walls, we found it more difficult to photograph them than we had anticipated. We were obliged to use our wide angles and make the best of distorted foregrounds. These of course gave us more width of focus and enabled us to include a bit of sky. I found special difficulty in using the small camera, as it had no provision for being set in an upright position. On the whole, however, we secured a considerable number of good negatives. On our return through the Gorge we placed the conductor's name upon the list of those who were to receive some pictures, and thus beguiled him into not insisting on our paying fare a second time.

On turning northward from Pueblo, an intensely black and angry cloud was seen to gather many miles in advance of us. It proved to be what is so well-known in the vicinity of the Rockies and in the southwest as a "cloud burst,"



and we were soon creeping through a country that seemed to be all afloat, the water rolling and surging up to the very rails of the track. At last, at about ten o'clock in the evening, we arrived at Colorado Springs and learned that the flood had swept away the track a few rods in advance of us, and had left in its place a chasm 20 or 30 feet in depth; moreover, that so much damage had been done between us and Denver that we could not go on for at least two days; and that the hotels in Colorado Springs were all full, other trains having come in before us.

For this last fact, however, we cared not, as we had our blankets with us and could sleep soundly in the car; and we had already eaten of the bread and canned fruit and meat that we had in our gripsack.

We had intended to stop off here and visit Manitou and the Garden of the Gods. During the next day the track on the Manitou branch that had been swept away was relaid, and in the evening we passed over it.

Manitou, nestled as it is at the foot of Pike's Peak; is unique. I doubt if a more interesting or picturesque watering place can be found in America. The marvellous rock-sculpturing in the Garden of the Gods is too familiar to you to need description. Of the scenery here we secured some excellent negatives.

During our enforced stay at Colorado Springs we visited Mr. Mellen's studio—which studio contains a great deal of excellent work. The dark room was kindly placed at our disposal. Mr. Mellen uses for the most part stripping films in his field work. These he develops several at a time, and to somewhat greater intensity than would be desirable in glass plates. One peculiar fact in connection with his work is that most of his toning is done in the evening.

Two days after our first arrival in Colorado Springs, we could again proceed to Denver. We had now traveled, including the trip to Gray's Peak, 650 miles, for which the cost to us of railway tickets was \$17.50.

A few words may be in place concerning eating and sleeping in this sort of mountain travel. We were always in position to buy at least one "square meal" per day. For the rest we could get on very well with bread, canned meats and canned fruits of various kinds. We carried a dish and spoon for each, a belt-knife and fork for common use. One can sometimes buy milk at places where other food would not be relished. As to sleeping, we inured ourselves at the outset to sleeping on the floor and on the ground; sometimes on the floor of a cabin, for we found many such deserted in mining sections, and sometimes in a box car upon a side track. We always had our blankets with us, and we did not travel by night, preferring to see all that was to be seen of the mountain scenery. By traveling in this way we were independent, and were always prepared to stop off at points most accessible to the finest scenery.

Permit me here to add a word in regard to the hospitality of the people in this mining country. It were perhaps enough to say that they are Western people. Take a tramp through one of our Eastern States, undertaking to stop at night with the country people wherever you chance to be, and you will be treated very much as we treat a stray dog. But in the homes of the miners and ranchers of Colorado you will always find a welcome. The little that we asked was supplied to us willingly and at a cost merely nominal.

One of the most interesting events of the season to us was the ascent of Long's Peak. Five of us in all, including my brother-in-law, started from Gold Hill with a pair of stout horses and a wagon that contained blankets and provisions for a week; also a mule that carried one of us in the saddle. We made

our way up and down over the foot hills of the Great Range, and over the roughest and steepest trails that I had ever seen, and always at an elevation of from 7,000 to 10,000 feet, for 30 miles, around to the northern base of Long's Peak. Once we traveled upon what proved to be an old logging trail for two hours until we could absolutely go no farther. In descending some of these hills with a considerable load, it is customary to cut down a tree and attach it by the top to the rear of the vehicle, so that the limbs shall point forward.

But I must pass over the incidents of the ride. Arrived at Lamb's Ranch we made due inquiries in regard to the trails, as we had decided to make the ascent without a guide, and camped for the night beside our wagon in the open air, where we slept never so soundly. Much as I dislike guides in general, I am compelled to admit that most people would be wiser in taking one in the ascent of Long's Peak, for there seems to be but one way of scaling the summit, and that way would be to many people hazardous.

We started promptly at 5 A.M., and after a little search found the trail and followed it three miles to the timber line. A mile and a half farther up brought us to the Boulder Field, a mile or more in extent and of the roughest description. The crossing of this exhausts the strength rapidly. Then we came to the "Key-hole," a hole broken through one of the flanking ridges sent down from the summit, and through which lies the way.

In the boulders a few rods below this key-hole, stands a black-bordered, plain board, with an inscription touching the death of Miss Carrie Welton in September, 1884.

The wall in which this key-hole is broken through is but a few feet in thickness, and after climbing up and into the hole, the sight beyond was astonishing and almost overpowering. There were towering precipices above us and immense chasms directly beneath us, with five or six deep green mountain lakes far below. The chasms were half filled with glacial snow. The whole solid earth about us seemed to have been upheaved, gashed and torn by infinite power.

Then we went creeping along across one of these steep slopes, halting occasionally, as one of the party had become 'light-headed.'

We soon came to the "Trough," an exceedingly steep ascent of about half a mile up an old slide. The top of the trough, as seen from below, seemed to be close to the summit, but we found it to be a knife-edge, so narrow that only a bold man would dare to stand erect upon it. Two of the party desired to turn back, arguing that by returning at once we could not possibly reach timber line before dark. At this the youngest member of the party and myself immediately pushed on and the others soon followed.

One had already remained behind at the "Key-hole." Again we picked our way along the side of the precipice, where a sheer descent of a thousand feet warned us against a misstep. After having gone completely around the summit, we came at length where the perpendicular side sloped back a little toward the top, and where we were to take the final climb. The remaining work was short but severe. One of the party and myself scaled the summit at a point where we dared not descend, but the others were fortunate enough to strike upon the usual and somewhat easier way. The summit is bare and flat as the top of a table and inclosed by perpendicular sides. It occupies about fifteen or sixteen acres. The view from the summit is of the grandest character and one that I shall not attempt to describe.

The severe exertion and the thinness of the air began now to have a marked effect upon us. It was our experience on many occasions that after passing an altitude of 11,000 or 12,000 feet, we were affected with peculiar sensations due to the thinness of the air—a pinching sensation in the chest, pressure in the head, and sometimes nausea and nosebleed. Of course ordinary exertion causes panting.

Between the “Key-hole” and timber line, in our descent, one of the party was affected with severe vomiting, while another tried once or twice to perform the same operation, but without success. We arrived at timber line some time after dark, and after resting an hour by a good fire, all were able to descend the trail. It was a “sweetly solemn scene” as we filed down through the evergreen forest by the brilliant moonlight, pausing occasionally for the disabled to rest, and to drink from the snow-fed stream that descended the same ravine.

After entering the ranch and making ourselves a cup of tea, we fell asleep under the open sky. I may say here that a friend and myself slept every night during this week upon the ground, with no shelter above us, and that too without the least risk to health, so dry and wholesome is that climate.

I must not omit to say that the exposures made upon this trip were for the most part successful. We took our camera up Long’s Peak as far as the “Key-hole,” where we secured some striking views.

Of our return by way of Estes Park, and of our trip through Boulder Cañon, not the grandest, but the most picturesque cañon that we saw in Colorado, I have no time to speak.

The plates that we used were the Cramer Lightning and Extra Rapid, with two dozen Eastman paper films.

A word in regard to our method of changing plates. The one who was to change the plates lighted the pocket lantern, knelt in front of the carrying-case or some other object, and was covered with blankets until all sunlight was excluded. If this be done in the open sunlight it will be at the expense of some perspiration, but the time required is short.

At our headquarters in Gold Hill we constructed a non-actinic lantern and washing tray out of old boxes, darkened the windows of a bedroom, and developed our plates during the day. I think we tested pretty fairly the advantage of putting all the sulphite of soda into the pyro, four ounces of the former to one ounce of the latter.

Some of us no doubt can have what we want and pay for what we get. Others may feel that they cannot take such a trip without subtracting too large a sum from their annual profits. Such may like to know that the total expense of this journey was covered by the sum of \$160—I think I may say \$150.

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## EXPERIENCE WITH GELATINE FILMS ABROAD AND AT HOME.

BY WILLIAM H. RAU.

(Continued.)

GENEVA affords a variety of subjects for the camera—splendid buildings, picturesque streets, the Rhone, the lake, and many historical buildings, among which we were shown the house of Calvin. We made a red-letter day excursion by steamer on the Lake of Geneva to Chillon, where we had a stay of several hours, taking in the well-known Castle of Chillon, and making a number of exposures with the camera held in the hand and using a shutter. Fortunately the sun was



in favor all day, and secured us a number of fine water effects with the villages on the banks of the lake. The next stopping place was Paris. The weather during the first five days was very bad, being rainy and misty continually. I almost despaired of getting any exposures, but in the meantime secured a police permit to photograph in the streets, also one for the galleries of the Louvre. I met Mr. Fassit, of this society, there, and he was preparing his camera for a siege of Paris, having a small outfit with him. I made a number of exposures from his hotel window on the Avenue de l'Opera, looking towards the Grand Opera House. I also made a number of exposures on interiors and statuary in the Louvre. Having some knowledge of Paris, I was enabled to get round quite rapidly, while good weather lasted, without losing valuable time. Securing an open barouche, we drove quickly to the numerous fine monuments, and whenever possible made instantaneous exposures. In such cases, I opened the lens nearly full, as I feared the films were not so rapid as the most rapid plates, and as I had no sunlight. Having spent eight days in Paris, three of which were fairly good, we started for London, the city of fogs and of difficult photography. Three of the days spent in London were bad. Only early in the morning was there any clear sunlight; but I noticed at night it was usually bright overhead. The only exposures I made were done early in the morning before 7 o'clock; and at night I found it unsafe to change my rolls before 10 o'clock, as the light was still strong enough to fog. We made a trip to Windsor, where the wind was very annoying, coming in gusts and blowing the foliage. At Oxford we secured a number of the old college buildings, and an instantaneous view of the River Isis, where the boat races take place. Leamington was our next stopping place, from which we first went to Warwick Castle, where we were unable to photograph without a permit. Kenilworth was next visited, where no restrictions prevented us from doing all we wanted to. Returning to London, we packed up, previous to going to Antwerp, *via* the Harwich route. Leaving all unnecessary baggage at Antwerp, we started for Holland, making our first stop at Rotterdam, where guides are so persistent that you must almost club them off. The weather was only fair here, partly clear and again very misty; however, the average was good. The Hague was not so good, the weather being cool and chilly; but in Amsterdam we had a delightful day, which we enjoyed in walking to the various canals, streets and buildings. The boys here were more annoying than at any other place, and I fear I would not have made many exposures without the pneumatic bulb, which acts without being seen or heard. Returning again to Antwerp, we had two very clear sunny days in which to see this growing city and make pictures. Two of the most striking features of Antwerp are the Flemish horses and the dogs in their carts. These I had no trouble in getting, as they are seen everywhere—the former especially on the docks, where heavy traffic is done.

Leaving Antwerp June 26th, we reached home July 8th, having been away just two months. During this time I made about seven hundred exposures in all kinds of weather and under all conditions, duplicating everything whenever possible. I carried with me an extra reel for each roll to save unrolling. This allowed the exposed roll to be packed at once in a box and be wrapped in orange paper and numbered and marked. On reaching home I was in doubt about the development, as I had been advised to use oxalate; but after a few trials I saw that pyro was preferable, and that potash (the regular Carbutt formula) was bet-

ter in my hands than the soda recommended by Eastman. Oxalate was advised more because it had no tendency to harden the substratum. As many perhaps do not know the nature of the film, I will quote briefly from Eastman's circular:

"The American film consists of a film of insoluble sensitive gelatine emulsion attached to a paper supported by means of a layer of soluble plain gelatine. The paper serves as a temporary support during the operations of exposure, developing, fixing and washing, after which the film is laid down on a prepared sheet of glass. The paper is removed by warm water, which dissolves the soluble gelatine layer and leaves the film on the glass. The paper is then replaced by a varnish of thick gelatine and glycerine, and the whole stripped from the glass ready for printing."

On filling my roll, however, I invariably drew the slide (after the roll was in position), and made a pencil mark on each end of the first piece. This indicated the first exposure. I then started the visible indicator, pointing away from me, so that it starts the same each time. This is absolutely necessary to insure against overlapping exposures. Also keep an accurate register, and wind on a new surface immediately after making an exposure. By getting into this system there can be no doubt as to the exposures having been made. To begin the development, I first unrolled the paper to the beginning, and had a glass cut the exact length of the exposure, and cut the pieces off with long shears at one cut. Then the film is placed in a porcelain dish, and a stream of water allowed to run on its surface; this I found positively prevented any air-bells forming. When limp, throw off the water, and pour on the developer, and proceed the same as with a dry plate, using very little developer. Examine it by strong transmitted light. As they seem denser than they really are, allowance must be made for the paper, which is afterwards removed. Any amount of density can be obtained, either by adding pyro or bromide, or simply long development. I prefer the pyro, as they can be gradually reduced again, if too dense, with dilute oxalic acid solution. Experience only will show you when the desired density is reached; it is usually when the image has sunk into the film. I would not advise developing more than one film at a time, although a number can be placed in the dish at once. Use fresh developer on each picture, as it loses strength, and will not give good results on using a second time. Wash well, and put face down in a deep dish, containing hypo four ounces, water one pint. I placed as many as fifty in the same fixing bath at one time, moving them every little while; and allowed a dish full to soak in water all night, and washed an hour in running water in the morning. They are next transferred to glass, which is done by coating clean glass, a size larger than the picture, with rubber solution, five grains of pure rubber to one ounce of benzine, and allowing it to dry at least eight or ten hours. This is my experience; for, if not dry, the film will subsequently in the hot water come up on the edges. Slip the glass plate under the negative, which should be face down in the water, and lift them up together; drain well, and remove the water by scraping with a rubber squeegee, and set aside to dry. When thoroughly dry, and not before, place the glass with paper on in a rubber tray, and pour hot water on it, allowing it to soak a minute; then pour off, and add boiling water; this will blister the paper; and by gently starting the edge with the blade of a knife, the paper can be easily lifted away. Remove from the film with warm water all traces of the soluble substratum which was between the paper and the film.

The image-bearing film is now on the glass with the paper removed. If in-

tensification should be necessary, the operation can be performed in the same manner as with the dry plates.

My first idea was not to remove this film from the glass, but to use it only for lantern slides, where the negative could be reversed. But during my absence Mr. Eastman introduced a gelatine skin which could be swelled and floated over the film on the glass and gently squeegeed, and allowed to dry, after which the whole could be readily stripped from the glass, only leaving the rubber on the film side, which can easily be removed with benzine. These skins have smooth and glossy surfaces; the glossy one should be squeegeed next the film, as it adheres better. In applying it, first slip the skin into the water, and slide it under obliquely. Never attempt to remove it from the glass until thoroughly dry, as it will pull out of shape. Spotting, painting out the skies, etc., can now be done on either side. Alum is not used in any of the solutions; for any film that can stand boiling water surely will not frill, but the use of alum may harden the substratum and prevent the removal of the paper. The above is the result of weeks of experience and practice, and may not work in the hands of every one without some practice. It is not strictly in accordance with Eastman's formula. In conclusion, I would state that whenever I had good light I have not lost a negative, as the coating on the paper is more even than glass, and the film uniform in quality. The process has many advantages over any glass plates. It does not give halation, no matter how strong the contrast; and works clean to the edges. The film can be thoroughly washed free from chemicals, as the soaking it gets in hot water surely must dissolve anything that may remain. For interiors with great contrast it is excellent, and the use of the film on paper and in a roll holder certainly gives one many opportunities that would be missed were glass used. They are readily packed. True, it requires great care and cleanliness and considerable labor to finish them; but were I going again on an extended trip, I should use the same method, only using a larger size. I have with me a number of lantern slides from negatives made on this trip, which will be shown after the meeting.

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## ON PHOTOGRAPHING GENRE AND STILL-LIFE SUBJECTS.

BY JOHN BARTLETT.

[Read before the Photographic Society of Philadelphia.]

How often are we told by the art critics that there is but little scope in photography for the exercise of the inventive faculty, or the power by which diverse objects in nature are combined and contrasted to form a harmonious picture.

The photographer must take things just as he finds them.

His pictures are mere transcripts from nature, nothing else. He may, indeed, possess a selective ability "to know what beauty is, see where it lies." Yet after all his work is only the best possible under the circumstances.

The discordant elements which accident often obtrudes to mar the lovely scenes in nature, which the artist may exclude and preserve the harmony, can at best be only modified by the photographer, very often not to his entire satisfaction.

Nevertheless, the photographer who happily adopts a subject directly from nature, has the credit due to invention. He has the faculty of perceiving in nature that which is fitted to the purposes of art which escapes the ordinary observer; and



the mere fact of the perception of what is false, although he cannot always overcome it, is an advance towards the knowledge of what is true.

There is, however, we are glad to say, one branch of photography in which invention has a broader scope; where the elements are more directly under control—more plastic, we might say—so that they may be shaped to our liking. This province we shall make include *genre* and still-life photography, because it has for its aim just those subjects which delight us in the works of the Dutch and Flemish painters; dealing with the actual and common world about us; never entering the higher realms of the imagination, but contenting itself with the drama of every-day life. Here the artistic feeling may combine and contrast and re-arrange until the very idea the mind has is embodied in an actual picture.

Broadly considered it may be made to include a variety of subjects; the grouping of flowers and fruit, the arrangement of vases, urns, statuary, as well as the representation of domestic scenes and incidents.

It is surprising what pleasing results can be secured by calling into service just such things as are in every-day use.

It is impossible to give any direct rules for arrangement to produce pleasing effect, but there are some general principles on which all such work is constructed, the neglect of which will destroy the pictorial beauty.

At first we shall have some difficulty in grouping to our taste. The objects seem almost antagonistic, but by and by, as we struggle with them, the faculty is developed of seeing things in their relation to one another. The vague conception in our mind seems to grow with the exercise, and to take more and more definite shape, until it seems almost as if the objects had a previous connection and we were merely bringing them together again. Different parts of the most diverse things will fill in and adapt themselves to one another, and become helps to pictorial effect rather than the hindrance we at first supposed them to be.

I imagine it is much the same as the management of rhyme and meter are to the poet: in the beginning, obstructions to the freedom of thought; but as he progresses, the pleasant channel into which his ideas easily flow.

Composition is making one thing out of several things. A poem is made up of words arranged in a certain way, but it is just this arrangement which makes it either the work of a genius or the production of a fool; and so a painting or photograph is an arrangement of forms and shades, but it is in the manner in which they are grouped and contrasted which gives it value as a work of art.

There is no design in a load of stone dumped out of a cart, nor is the carter an artist; but when these same stones are set in appropriate form, we see the idea of the architect gradually unfold, until the perfect building stands before us in all its beauty.

So in photography, the haphazard throwing together of all sorts of things without any definite end or purpose is not picture-making. The result will be tame and tasteless, no matter how beautiful the individual objects may be.

We must study the relation of parts and the harmony of the whole.

One error we are apt to fall into at the beginning, is the idea that there should be a symmetric balance; that the central figure should be relieved by having on each side figures of equal proportions. Now you will very soon tire of such an arrangement. It becomes monotonous. There should be symmetry, but it must result from the balance of lines and masses. We should endeavor to secure as broad a massing of the lights and shadows as possible; for nothing is more

unpleasant than spottiness in the picture, an alternation of light and dark in little patches.

We must not forget that the light upon objects is heightened or subdued by the position they occupy. An object shaded by another, will, of course, be darker in tone; and a dark thing is relieved and brought out more prominently by being placed before a light one, which serves as its background, and so we can set off a light object before a dark background. Colorless glass, for instance, should always be placed before something dark to show its peculiar quality. Objects having highly polished surfaces, though dark themselves, are lightened in the photograph by the rays reflected from them.

Avoid overcrowding the picture. Too much detail detracts from the general interest. It is best to express our ideas in the fewest possible terms, consistent with clearness, in photography, as well as in writing.

A plain, quiet background for still-life pictures, one in which the objects softly blend, is always effective. In choosing such a ground, you must take into consideration the peculiarity of unorthochromatic photography in translating the tone value of color. The background might be placed at an angle with the group rather than parallel with it, so as to secure gradation.

Very often dark hangings, relieved by the graceful folds of the drapery which catch the light, add much to the charms of still-life and flower subjects.

In the arrangement of the light, avoid violent reflections from polished surfaces. You will find an overcast day, or early in the morning, or at twilight, the most favorable times for securing soft effects.

A thin sheet of muslin could be used to modulate the strong sunlight, but it would be reflected in the polished faces as a mass of white light, and the effect would not be very pleasing.

It is hardly necessary to caution you against the false taste of stopping out the background with opaque color. If the background has radical defects, reject the picture entirely, or else be satisfied with it with its faults. Nothing can be more unpleasant than the harsh outlines of the objects against the light background, and even if you print in another background, the figures lack that soft blending with it which is so effective in a good picture.

In nature we can hardly say there is outline; it is, in truth, only shade on shade.

(*To be continued.*)

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## PHOTOGRAPHING THE HEART IN ACTION.

BY W. G. THOMPSON, M.D.

[Address before the Society of Amateur Photographers of New York.]

I AM very much indebted to you for your invitation to show this camera this evening, because I hope to get some information from you about the difficult points I have met with in my experiments.

Two or three years ago, when I saw photographs of the horse in motion, it occurred to me that it would be possible to photograph the movements of the heart, and thus, perhaps, ascertain physiological facts in regard to its action and the effect of different drugs in modifying its contraction and give us, therefore, a means of illustrating *materia medica*.

I had thought about this matter some time before I was able to make experi-

ments, and it was only last winter that I commenced them. I had never taken any photographs before that time, and I did all the work entirely alone, so that I very naturally met with many difficulties. I had to do the work in my own room, indoors, in mid-winter, with a very poor light. The principal object which I wished to photograph was the heart, but I also extended the work to the intestines and their movements. I found the work a very difficult one, for the reason that the heart was not only constantly in motion, but the surface of the organ was moist and shiny, and, with the surrounding organs and tissues, it was very difficult to differentiate it at all.

I made experiments with a Blair camera, and I was satisfied that the work could be done.

My object has been, all through, to obtain a good photograph of the normal form of the heart when it was both in a complete state of relaxation and contraction, and by giving some drug which will have the effect of contracting or enlarging it, this can be shown very clearly.

The heart is an organ that has a great deal of vitality, and it will keep on beating long after the wall of the chest is exposed and it is laid bare. It will sometimes keep on beating after it is removed from the body, and it has been known to thus keep beating half an hour if it is kept warm and moist; and it is because of this vitality of the organ that it has been possible to make these experiments.

In photographing the hearts of animals, I used for experiments, calves, frogs, guinea-pigs, etc. They are etherized, the chest is laid bare, and the heart is then exposed. It very much facilitated the work to use some white background, and, after numerous experiments, I found that the best thing was celluloid, and I procured some celluloid cuffs and cut them up for use. They can be kept perfectly clean from blood by the spray of the physiological solution that is constantly thrown over the heart to keep it moist.

I have some few of these photographs here [showing them]. I have employed them in lecturing on physiology, and they have been exceedingly useful for illustration in many ways. These photographs do not concern us now particularly, but the specimens that I have here will give you some conception of the work.

This is a photograph of the living heart of a pigeon, and it is in a state of full relaxation. That is, it is full of blood. In the companion picture you will see the same heart in a state of full contraction; that is, contracted as much as it ever is under normal conditions. The photograph which you see above, represents a calf's heart that was cut in two very quickly, and there is a slight change—a slight diminution in the size of the cavities of the interior of the heart in the two pictures. The one on the right hand represents the condition when the heart was completely relaxed. It was then stimulated to contraction by the application of heat, and the picture at the left hand and the central one are, both of them, somewhat diminished in diameter, showing the action of the stimulation of heat on the heart.

Here is a photograph of a frog's heart taken without any background, and you will see the difficulty which I met with in trying to throw the heart into full relief. To overcome this, I used the celluloid disks.

There are one or two photographs which I have taken of the intestines, which I have brought here to show you the action of drugs on their normal movements.

I did the work that is shown by these photographs with an ordinary camera,



and the difficulty which I found was that you can only take one picture at a time. Meanwhile the heart gives a number of pulsations and you can only obtain one photograph of a single pulsation of the heart.

It is impossible to take, of course, with an ordinary camera, more than a single view of any given pulsation of the heart. I was anxious to get a series of views of the same pulsation, which would give me intermediate stages between the full expansion of the heart and its full contraction. I worked at this problem for a long while, and early in the spring I presented the problem to a number of

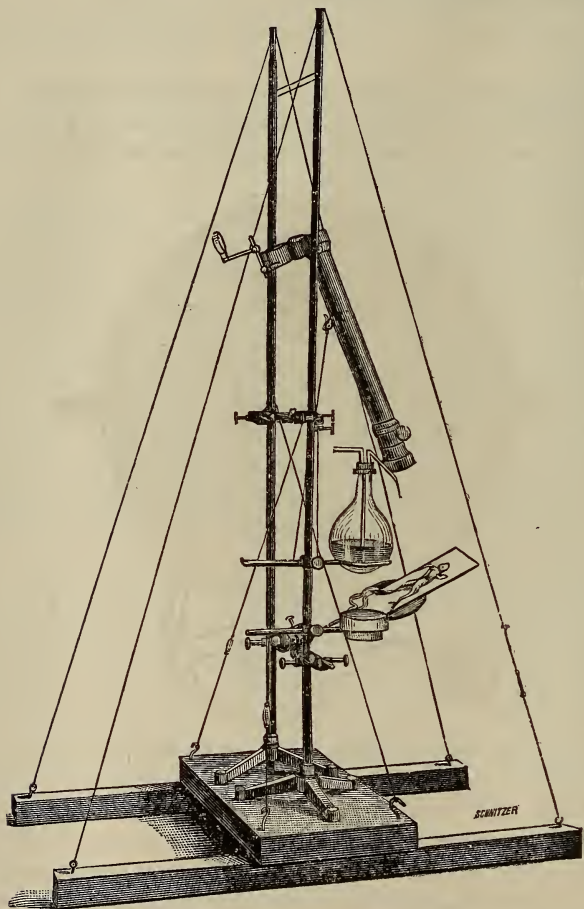


FIG. 1.—THE CAMERA MOUNTED.

amateur photographers, and also to several scientific friends who were interested in the matter, and I went also to a number of professional photographers. A large electrical machine to move the shutter and work a series of lenses, was suggested, but I ascertained that it was too expensive and too liable to get out of order. My problem was quite different from photographing a horse in motion. That was done by having a series of lenses in a line; whereas the object which I wanted to take was in a fixed position in regard to its surroundings and the idea was to have the plate moved rapidly and take a succession of views of the same pulsation.

I passed a shop window one day and saw a Gray camera on exhibition. I

went in and looked at it, and it occurred to me to see how fast I could operate it. The arrangement of that camera is undoubtedly familiar to all of you. It contains a circular negative plate that is rotated by a very simple mechanism, and I found that by touching a spring and turning a little knob in front, the plate moves quite rapidly, and I could work it at the rate of taking six pictures in a minute.

I found Mr. Gray, and I told him I thought he could devise some kind of mechanism that would turn that plate around faster. I do not know anything about mechanics myself, and all the ingenuity of the construction of the apparatus belongs to Mr. Gray. He has made an apparatus which is very successful, and I have succeeded in taking six pictures in one second with it. That is the most rapid photographing that has ever been done in this country. It has only been done by one other physiologist in the world, and that is Professor Marey, of the Physiological Institute of Paris, who has photographed flying birds, etc., at a

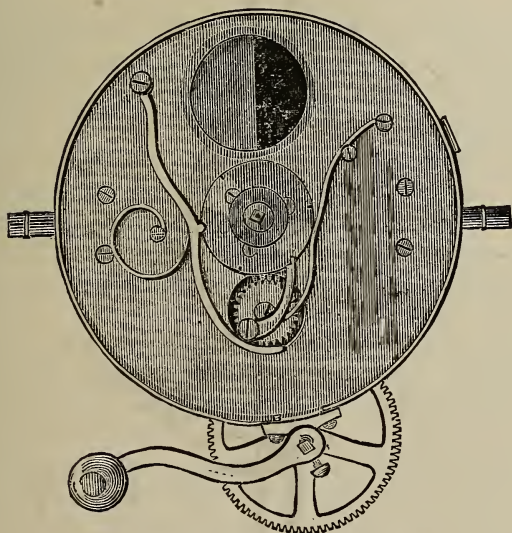


FIG. 2.—INTERIOR OF THE CAMERA.

faster rate even than that, but under different conditions of illumination. I never heard of his camera until mine was finished. The proof of what I say is an absolute one, and is very simple. I have one of those "horse-timer" clocks. It has two second hands—the large one goes all the way around the face, and the little one clicks four times in a second. I put that in focus and rotated my camera, and this is the result.

[Dr. Thompson here showed a photograph of the face of the time clock mentioned].

Turning the picture around in this direction [illustrating], you will see that I photographed the second hand six times in one second. The little hand marks a quarter of a second, and then jumps around to the next quarter. In photographing it I got it in these moments of rest, and I photographed it so quickly that I took it in two instances twice in the same position, because two of these six pictures are actually identical. The large second hand moves around the larger disk, and it has moved from  $59\frac{1}{2}$  to  $60\frac{1}{2}$ .

Here are some photographs of the heart in motion which are taken in the same way, and I regret that in enlarging I have lost very much in clearness. This was done very hurriedly; as I only had a day or two to prepare them in order to show them here. I photographed three pulsations of the heart, one after the



FIG. 3.—PHOTOGRAPHS OF THE HEART IN MOTION.

1, Normal diastole; 2, auricular systole; 3, ventricular systole. 1, 2, 3 were taken in half a second. 4, 5, 6, same as 1, 2, 3, after injection of toxic dose of *Strophanthus hispidus*. 4, 5, 6 were taken in half a second. The pulse rate was 74.

other, giving three views of full relaxation and full contraction of the organ. The heart was beating at the rate of 72 times a minute, I photographed three pulsations, and that gives an exposure altogether of about  $2\frac{1}{2}$  seconds, in which time all six pictures were taken.

This camera, in regard to which I wish to say a word, is exceedingly simple. The mechanism is exactly like grinding a coffee-mill [illustrating]. You turn this handle and take your picture (laughter). There is no limit to the velocity with which you can take the pictures except the quickness of moving your hand, and if the heart is beating slowly and you wish to take a picture slowly, you turn the crank slowly.

This instrument has been photographed and reproduced in the *Philadelphia Photographer*, and also in the *Scientific American Supplement* and the *Medical Record*. The stand which I have here this evening is a very cheap one. I have a more elaborate one than this, but it was not convenient to bring the larger one here to-night. The other one has an arrangement for the hot spray for keeping the animal alive. You can focus by moving the object itself and leaving the camera at rest. I have to do all of this work in strong sunlight. No other light is strong enough for such rapid work.

The camera consists of a brass circular flat box, containing four cog-wheels, a little pawl, and two shutters. A little flat spring fastened to the cover holds in position the circular plate negative. The plates are the same size as those used in the "vest camera." I had the camera made that size because the plates were ready made, and I could get them cheaper than they could be made to order.

The plate is held by the spring in the cover against a little brass disk, which is covered with rubber to make it adhere to the glass. The rubber is fastened on with asphalt. Any movement of the wheel rotates the plate. I did not know whether it was necessary to stop the plate and rotate it again six times in a second, or whether one could photograph on a rapidly revolving plate, but I thought best to stop the plate and move it again, and this is what the arrangement of cog-wheels does with the little pawl inside. The pawl catches on a cog-wheel which turns this little brass disk one-sixth of its diameter. It slips back, rotates it another one-sixth of its diameter in that way [illustrating] very rapidly, six times in a second.



The shutter is circular and is placed in the bottom of the brass box, and it has two openings. It is rotated by another cog-wheel, but in the opposite direction to that in which the plate revolves. The shutter having only two slits, has quite a wide surface for closing the aperture, and the mechanism is so arranged by the adjustment of the cog-wheels, that while the plate is in motion from one position to another, the shutter is at rest and the aperture is closed, so that no image is taken, and there is consequently no blur while the plate is in motion.

I do not know why one cannot take instantaneous pictures on a moving plate of a stationary object just as well as one can take the reverse. I do not know whether that is a possible thing or not. There is a small shutter here which shuts off part of the brass box, so that the back portion of the box holding the sensitive plate can be taken into your dark room while you change the plates. The little shutter, when the camera is in use, is pulled out like that [illustrating].

The information I would like to get is to know how to throw a better light on the object. I have been very much bothered in trying to get a sufficiently clear definition. I am troubled by shadows and by indistinctness a good deal, and I would like to know whether there are any ways of focusing the light or getting it of a purer quality, which will add distinctness. I shall be glad to show you, after the meeting is over, any further details about the apparatus. [See discussion in Society's report in next BULLETIN.]

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### OUR PICTURE GALLERY.

CONTINUING our remarks upon the pictures sent us for criticism, we will begin with a contribution of Charles H. Beach, entitled "Desolation," which consists of an old shingle-sided house in ruins and literally covered with icicles. The picture is a very beautiful one, the fine detail in the icy fret-work being well brought out. Mr. Beach tells us that a Stanley plate was used, and we must confess that the result cannot be excelled.

Among the finest photographs that we have ever seen, we must class the beautiful views made by our friend A. C. McIntyre, at Alexandria Bay, on the St. Lawrence River. We have seen a number of beautiful views made by this artist, but these pictures made upon the Stanley plates exceed anything hitherto accomplished by him. They are uncommonly beautiful. The brilliant atmospheric clearness, the exquisite detail both in foreground and distance, the excellence of delineation in the most prominent objects, and the admirable choice of the points of view, all go to make these pictures marvels of photographic skill.

H. N. Macintosh of Newburyport, Mass., sends us a handsome 8 x 10 view of the Boston steamer Empire State under full headway, taken on a Stanley plate. The picture is strikingly natural, and full of fine detail, showing very rapid work both in the shutter and plate.

D. K. Prescott, of Duryea's studio, Brooklyn, contributes a handsome 11 x 14 half-length portrait of a lady which is a fine piece of photographic work. It is full of fine detail in the drapery, especially the lace-work; the lighting of the face is excellent in every respect, and the tone is of a rich, harmonious shade.

A handsome solar print, 27 x 36, made from a 5 x 7 negative of a group by I. Paxson, on the new "Standard Brand" of paper is a very effective piece of photographic work. The paper was prepared by the serum process, and the exposure was made with the electric light, the time being ten seconds. It appears

to us that this is one of the best enlargements of this kind we have seen lately, and speaks well of the new paper.

The veteran T. C. Roche, one of the BULLETIN staff, sends us from Chicago several fine cabinets made by G. T. Charles upon Stanley dry plates. These portraits are remarkable for exquisite detail, softness, and thoroughly fine photographic work generally; they rank among the best results we have seen in this class of work.

Our good friend Sam. Partridge, of San Francisco, Cal., contributes a number of charming little views made by him. These comprise scenes that embrace some fine effects in light and shade in foliage, together with groups of children. A little child leaning on the seat of a swing, with a bright sunlight streaming between the two large tree trunks to which the swing is suspended, is particularly effective, and makes an exceedingly pretty picture. Another beauty is a view of two children in a shady lane with overhanging knarled branches. In this picture the beautiful gradations of light and shade, the fine effects of perspective, and the quite rusticity of the scene are admirably caught. But there, all the pictures are fine examples of photographic skill, and a fine tribute to friend Partridge's artistic taste.

We have quite a number of other pictures that have been added to our gallery, but our editors say they cannot spare us any more space in this number, and we must leave them until the next issue.

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#### OUR ILLUSTRATION.

WITH this issue of the BULLETIN we present our readers with an illustration from one of Professor French's fine negatives, taken upon the Stanley plate with a Dallmeyer wide-angle lens having the back combination removed. The reproduction of the picture by the Ives' process speaks well for that ingenious method of photo-mechanical printing. There are few processes that would give such fine results from a metallic plate.

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BROTHER GARDNER ON THE RELATIONS OF SCIENCE TO HUMAN LIFE.—“My fren's,” said Brother Gardner, as he opened the meeting and nodded to Samuel Shin to put another box in the stove, “I trust dat each an' ebery one of you may take a deep interest in astronomy, but de man who sots on de fence in de day time lookin' for de ebenin' star' am gwine to be hungry in summer an' cold in winter. A speerit of philosophy am to be incouraged in all, but de man who sots down to cold 'taters an' codfish, an' reasons dat it was to be, an' darefore is, can't borry any money of me. De study of natur' am to be commended, but doan' git so enthusiastic over it dat you am willin' to see de children go bar'fut in Jiniuary fur de sake of studyin' deir heels an' toes. Pursue de study of pollytical economy if you will, but doan' make de diskivery dat de hull subjek resolves itself into sellin' your wote fur de very highest market price. De science of anatomy may well interest every one of you, but doan' stop short in your studies at de diskivery dat an average healthy man can hold down a hard-bottomed cheer fur six straight hours widout seriously affectin' his constitushun. Seek to master de science of mechanism, an' doan' emagin dat you hev got de hull bizness in your pocket as soon as you hev demonstrated to de ole woman dat a dull axe am better dan a sharp one to split wood wid. Brudder Shin will please light two more lamps, stuff an old hat into dat broken pain in de alley winder, an' we will purceed to bizness.”—*Detroit Free Press*.

# ANTHONY'S Photographic Bulletin.

EDITED BY

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Aided by ARTHUR H. ELLIOTT, Ph.D., F.C.S.,  
and a corps of practical assistants.

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## THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.

A STATED MEETING of the Society was held Wednesday evening November 3d, 1886, with the *President*, Mr. FREDERICK GRAFF, in the chair.

The Executive Committee reported that arrangements had been made for maintaining what might be called a monthly loan exhibition of work of the members.

The pictures were to be selected by the committee, and exhibited in frames provided for the purpose; a fresh collection being shown at each meeting, and remaining on exhibition in the meeting room throughout the month.

The Committee on Joint Exhibitions presented their report. [See Report in Proceedings of Society of Amateur Photographers of New York.]

Signed by

JOHN G. BULLOCK,  
CHARLES R. PANCOST,  
ROBERT S. REDFIELD.

The report was accepted unanimously, and the chair appointed the same committee as representatives of the Society in the Joint Ex-

hibition Council, as provided for by the terms of the agreement.

The Committee on Membership reported the election of the following new members. Corresponding Member: Dr. J. Max Mueller, of West Chester, Pa.; Active Members: John A. Shulze, Prosper M. Dallett, Frank H. Rosengarten, Sabin W. Colton, Jr., and Richard Zeckwer.

The resignation of Mr. William A. Haines was reported and duly accepted.

The paper for the evening, "On Photographing Still-life and Genre Subjects," illustrated with lantern slides, was read by Mr. John Bartlett. [See page 690.]

In the question box was found the inquiry, "What can be considered as the 'instantaneousness' of gelatine plates and the well ascertained shortest exposure attained?" It was explained by the Chairman that this question had been asked by a United States army officer in the Ordnance Department who was engaged in experiments in photographing projectiles during their flight.

Mr. DAVID PEPPER, Jr., stated that a picture of a ball falling before a screen had been taken with one of Mr. Muybridge's fastest shutters in the  $\frac{1}{1000}$  of a second. On the screen was a scale eight feet long. The ball was quite sharp, though there was a perceptible blur from which the time was calculated.

Mr. DAVID COOPER, who was present as a visitor, referred to a picture made by Mr. W. T. Gregg, of a projectile being fired from a dynamite gun. The shell was shown a short distance in front of the muzzle of the gun, and was blurred about one-half its length. The velocity of the projectile was stated to be 1200 feet per second. In front of the shell could be seen what was claimed to be a cushion of compressed air. This cushion had the appearance of a comet, and was supposed to be the cause of the difficulty or impossibility of hitting with a pistol bullet a suspended egg-shell or handkerchief.

Captain MACNUTT, of the Frankford Arsenal, when asked for his experience in photographing the flight of projectiles, stated that he had been trying for two years to devise a means to accomplish this. The difficulty seemed to be in securing sufficient rapidity of exposure, at the same time having a position near enough to get a respectable sized picture. The projectile moving at from 1200 to 1600 feet per second, would require a faster shutter than he had yet seen. It would also be very hard to catch it without some delicate devices, which he had been unable to command.



That it is the fault of the plates and not of the shutter, is surely not the case where the image is blurred, as seen sometimes in photographs of moving trains, trotting horses, etc. Did the shutter move at the proper rate of speed, then a lack of a proper degree of sensitiveness in the plate would prevent any image being formed. The subject is, he understood, being pursued under the direction of Herr Krupp, and if any results are obtainable, they will surely be gotten with the facilities he is able to command.

The high velocities of projectiles at the muzzle, has led to the suggestion that they might be gotten at a point, say 500 yards off, where the velocity is considerably reduced, but this has placed other difficulties in the way, chief among which is exposing while the projectile is in the field of view.

Mr. BARTLETT expressed his doubts whether the most sensitive film is capable of recording the presence of the cushion of air preceding the projectile, inasmuch as the atmosphere even under the greatest pressure would be invisible. He thought we might as well expect the photographic image of the temporary vacuum which follows the ball.

Dr. HOWE, Dr. JORDAN, and others thought the limit was in the plate rather than the shutter, the former stating that in making marine pictures he found that even with the most rapid plates it would not do to stop down too much or increase the speed of the shutter beyond a certain point.

Mr. CARBUTT, on the other hand, had over-exposed plates when using the smallest opening of a Hoover shutter and a Euryscope lens on marine subjects.

Mr. BARTLETT had made a good instantaneous marine exposure on a Carbutt A plate.

Mr. COOPER thought the result depended upon the character of the shutter. A shutter constructed on the "focal plane" principle, that is working directly in front of the plate, he thought best adapted to taking the trajectory of projectiles. Even when not going at its greatest speed, it was too rapid for the plates, and if pointed at the clear sky no effect would be shown on the plate when development was attempted. If, however, after a preliminary exposure of this kind, the plate was again exposed, it would be found to have greatly increased in sensitiveness.

Mr. Cooper showed one of the Eastman detective cameras for use with a roll holder, and with a "focal plane" shutter. The shutter was in the form of a wedge-shaped device within a box, whose base was hinged to the

board holding the lens, and at the apex of which was a slit, whose width could be regulated at will. On touching a spring at the side of the box the wedge fell, allowing the slit to pass in front of the plate from top to bottom, where it was caught and held. By reversing the box, the next exposure could be made without any resetting of the shutter, it simply being allowed to fall to its original position. If actuated by a spring, the shutter would work sideways, thus allowing either upright or horizontal pictures to be readily made as required. The speed of the shutter could also be increased by use of the spring.

Mr. IVES showed a photograph of the prismatic solar spectrum made on one of his chlorophyl-eosine plates, showing them to be more sensitive to the red and orange rays than to the violet. The negative was made with minimum exposure and forced development, to show the strongest possible contrasts. The action in red and orange was solely due to chlorophyl; that in yellow-green about one-third to chlorophyl and two-thirds to eosine; that in dark green chiefly to chlorophyl.

Mr. CORLIES showed a film negative, of excellent quality, whose history was interesting. The negative paper had been sent by mail to Mr. Fassitt, a member of the society, now in England, where it had been exposed by him on the interior of Tintern Abbey, and then returned to this country by mail, and finally developed by Mr. Walmsley.

Adjourned.

ROBERT S. REDFIELD,  
*Secretary.*

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## PHOTOGRAPHIC SECTION OF THE AMERICAN INSTITUTE.

REGULAR MEETING, NOVEMBER 9, 1886.

*President* H. J. NEWTON in the chair.

The *Secretary* announced the receipt of the usual photo journals contributed monthly to the section.

Mr. GARDNER, Chairman of the Executive Committee, announced that the lecture of the evening would be given by Mr. Abraham Bogardus, entitled "Forty Years Behind the Camera," after which a paper would be read by Mr. Charles Ehrmann respecting "The Photographic School at Chautauqua," and on the evening of December 7th, the distinguished artist and President of the Kit Kat Club, Mr. P. G. Cusachs, would entertain the Section by giving an illustrated lecture, entitled "Rambles in the Mountains of Catalonia" (North-eastern Spain).

Mr. ABRAHAM BOGARDUS was now introduced to the audience, and read his paper [see page 679], after which Mr. CHARLES EHLMANN read his paper [see next BULLETIN.]

Dr. VAN DER WEYDE then rehearsed some of his early experiments in the daguerreotype process, and explained briefly the chemistry of the art. He was followed by Sergeant Von Sothen, who recounted (by request) the means employed in successfully photographing the Flood Rock explosion. [For particulars of this account, see page 727 of Anthony's BULLETIN for December, 1885.]

Mr. CHARLES BARNARD, who is connected with the Chautauqua University, then explained briefly the aims of the new school of photography.

The Chautauqua University is one of the most remarkable educational institutes in the world. It seeks to educate at home, and for this purpose has a regular course of reading extending over four years, and its pupils are to be found in all parts of the world. The University has also a great number of smaller schools where instruction is given by letter and by printed instruction books. It has also in the summer, at Chautauqua, a great number of schools where many branches are taught every day to the scholars in attendance. It is the aim of the new school of photography to teach the art at the summer assembly grounds and by means of correspondence. The pupils can stay at home and receive instruction through the mails, or attend Chautauqua in July and August. The pupils of the University now number upwards of one hundred thousand, and the classes increase rapidly every year. It is believed that by teaching photography to all who wish to learn the art and science, as well as trade, photography will be benefited. The amateurs in this country now exceed forty thousand in number, and should the number greatly increase, by means of this school no harm, but, on the other hand, great good, will come to the photographic fraternity throughout the country.

At the close of Mr. Barnard's remarks, the *President* exhibited one of his negatives, made on the last field day excursion, of the front piazza of the Park Hotel, Fort Lee. This negative, he said, would have been entirely useless on account of the heavy shadows and lack of detail, if he had depended simply on development; but, by subsequent treatment with plumbago, after varnishing it with ground glass substitute, he had been able to obtain satisfactory prints. In cases, therefore, where

negatives like the one shown could not be conveniently retaken, the method he described might be of service to others, and hence he had called their attention to it.

He also showed three imperial cards of a young lady, which for effectiveness of light and shadow, as well as detail and brilliancy, are seldom equaled by any of the known photo processes. These pictures he said, he exhibited for the purpose of showing that, with the proper lighting of the subject, as good results could be obtained with dry plates as with wet. With the former, a much more subdued light was required than with the latter, and many photographers, not noting this, had given their testimony in favor of wet plates, and no doubt honestly believed that no dry plates could ever compete with them. The same amount of experience with dry plates that had been given to wet, would no doubt demonstrate that the art had not been taking a step backward, by adding ease and speed to the operator, as was often asserted by the champion photographers of 1876.

After passing a unanimous vote of thanks to the speakers of the evening, on motion the Section adjourned to meet December 7, 1886.

## THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.

SPECIAL MEETING OCTOBER 27, 1886.

THE meeting was called to order at 8.10 P.M., *President* BEACH in the chair.

The synopsis of the minutes of the last meeting was read by the Secretary and adopted.

The *President* then announced that at the next regular meeting, to be held November 9th, a paper on "Pyrogallol," by Professor Spencer B. Newberry, chemist at the Cornell University, Ithaca, N.Y., would be read and an improved portable apparatus for making the oxy-hydrogen light would be shown.

He then spoke of the entertainment to be held on November 18th, and asked for subscriptions to help pay the cost of printing, in order that the gross receipts might be turned into the treasury.

The special excursion to witness the unveiling of the Statue of Liberty was announced to take place on the 28th, and a commodious propeller, the *Enterprise*, had been engaged to convey the party. Special privileges had been accorded by Rear-Admiral Luce to the society to obtain advantageous positions.

A very enjoyable field excursion occurred on Wednesday, October 20th, at Passaic, N. J. The party included Mr. C. Volney King, Mr.

William M. Frisbie, Mr. George H. Young, Dr. M. L. King, Mr. George H. Cook, Secretary Granger, and the *President*. They were handsomely entertained by the Secretary at his residence, and were delighted to learn that Mrs. Granger was as deeply interested in photography as her husband. They returned home at sundown, having exposed in all about one hundred plates.

On Friday, October 22d, a meeting of the representatives from the Photographic Society of Philadelphia, the Boston Camera Club, and this society, took place at the New York Society's rooms, for the purpose of deciding upon regulations to govern photographic exhibitions.

The Philadelphia Society's representatives were John G. Bullock, Vice-President, and Robert S. Redfield, Secretary; the Boston Camera Club was represented by President George E. Cabot; and this Society by the Special Committee on Joint Exhibitions, consisting of C. W. Canfield, F. C. Beach, and Secretary John T. Granger.

The meeting was called to order at 10.30 A.M., and a continuous session was held until 4 P.M., with the exception of half an hour for lunch.

All points of differences were settled with very little debate, and uniform regulations were agreed upon to govern all joint exhibitions, which were to be adhered to by each society.

It was decided to organize a Joint Exhibition Council, to consist of nine members, three from each society, who will have power to amend the rules, appoint the judges, and supervise exhibitions.

The exhibitions are to be held in the fall or winter of each year in rotation, commencing in New York, 1887; Boston, 1888; and Philadelphia, 1889.

Each society bears the expenses of the exhibition in the city in which it is held. The first joint exhibition will therefore be held under the auspices of this society, probably during the first week in February or March, 1887.

It was agreed to omit any special classification, but to allow the judges to be free to select the best pictures, no matter in what class they might belong, for the award of a diploma.

Wall space is to be charged to applicants not members of either society. The competition is to be open to both amateurs and professionals, the object being to secure the very best and choicest pictures for diplomas, no matter by whom made.

These are some of the general features of

the mutual understanding; the Joint Exhibition Committee of this society will report at this meeting the complete rules and regulations.

The feeling of the representatives of the different societies seemed to be that it should be and would be the aim of all those interested to make these exhibitions illustrate the highest standard of photographic art. You may rest assured that the officers of this society will spare no effort to make the first joint exhibition to occur next spring, a very brilliant and successful affair, and we call upon all the members to remember it and to co-operate individually and collectively, to the best of their ability, toward making it a grand success.

Let me urge all of you to prepare for it now; do not delay till the last moment. Take pains to select your very best pictures.

It will doubtless be one of the largest and most attractive photographic exhibitions held in this country. A good collection of foreign pictures are promised, and both the Boston and Philadelphia societies expect to send very many and very choice pictures.

It is expected that the expenses of the exhibition will be heavy, but will be partly met by the receipts. In order to insure its success and not in any way embarrass the treasury, it is proposed to raise a guarantee fund; that is, we desire to have as many members as will, come forward and pledge themselves to any amount they desire, that in case the expenses of the exhibition should exceed the income or receipts, they will guarantee to make good a proportionate share of the deficiency.

I am informed by the Secretary of the Philadelphia Society, that their receipts and sales during their last exhibition were more than sufficient to pay the expenses. Let us have an exhibition that shall be an honor to ourselves and a credit to our great city.

The Secretary will read the rules.

The *Secretary*, reading: The Photographic Society of Philadelphia, the Boston Camera Club, and the Society of Amateur Photographers of New York, hereby mutually agree to unite in holding an annual exhibition for the promotion of the artistic, scientific, and technical excellence of photography in accordance with the following conditions and rules.

#### CONDITIONS.

The exhibition shall be held in the Cities of New York, Boston and Philadelphia in rotation.

Three representatives from each of the three societies shall constitute a Joint Exhibition Council, having general charge of all matters



connected with the exhibitions, with power to alter or amend the rules.

The representatives from each society shall be entitled to three votes on any question properly before the council.

The immediate details of each exhibition shall be in charge of a committee numbering five, appointed by the Joint Exhibition Council, three of whom shall be members of the local society.

Diplomas shall be awarded for artistic, scientific, and technical excellence, by a Board of Judges; one diploma being reserved for the best set of six lantern slides, and one for the best work by ladies.

The Board of Judges shall consist of five persons, chosen by the Joint Exhibition Council with special reference to their combined knowledge of the scientific, technical, and artistic requirements of photography.

The members of the Board of Judges shall not compete for awards, nor be connected in any way with the management of the exhibition.

The decision of the Board of Judges shall be final.

#### RULES.

1. No picture which has once been exhibited in competition at a joint exhibition shall be again admitted for competition.

2. No pictures will be received "for exhibition only" unless by special consent of the Committee of Arrangements.

3. All pictures, except those from foreign exhibitors, must be framed (with or without glass, at the option of exhibitor). Pictures from foreign exhibitors sent unmounted will be prepared for exhibition by the Committee of Arrangements.

4. The Committee of Arrangements shall have the right to reject the whole or portions of any exhibit offered.

5. Entries of all exhibits must be made on blanks issued by the Committee of Arrangements, and must be filed with the committee at least one week in advance of the date fixed for the exhibition, giving, so far as possible, information on the following points:

Number and size of frames.

Amount of wall space required.

Total number of pictures.

Subject or title of each.

Lens and plate used for negative.

If for sale.

Price.

Name, address, and society of exhibitor.

6. To each frame must be attached, by the exhibitor, a label, to be read from the front,

stating subject, lens, plate, and exhibitor's name of each print therein contained.

Blank labels will be furnished on application.

7. No picture will be received later than one week prior to date of opening of the exhibition, and no picture may be withdrawn before the close of the exhibition.

(To be continued.)

## What Our Friends Would Like to Know.

*N. B.—We cannot undertake to answer questions of a technical character except through the columns of the BULLETIN. Correspondents will please remember this.*

*Q.—O. W. M. writes: Will you please give me some information about "Webster's Elastic Cement" mentioned in "Mosaics" for 1884, page 117? I have made inquiries of all the druggists, painters, carpenters and roofers in this vicinity and cannot get any information.*

*A.—This is probably some trade preparation. We do not know it by the above name. Possibly some of our readers can help our correspondent.*

*Q.—W. B. C. writes: As the BULLETIN is a developer, I would like to have the mystery of a chemical freak developed. I dissolved some gold (dental) in nitric and muriatic acids (c.p.) proportioned to make gold chloride, and proceeded to neutralize with commercial sal soda and got the crumbs I send. Can you tell me what was the cause of it. It formed as a spongy cake on top of the fluid.*

*A.—These crumbs that our correspondent writes about have bothered us considerably, and we advise him to make sure the next time he neutralizes gold chloride solution with commercial sal soda, that he does not get hold of the hyposulphite bottle. The crumbs consist of precipitated gold, together with finely divided sulphur, showing that either he used hyposulphite by mistake, or else his sal soda bottle contained some of this salt.*

*Q.—J. S. H. writes: What is the best and simplest method of sensitizing wood for the purpose of printing on it with a photographic negative? I want to make a wood-cut.*

*A.—We cannot give you in these columns the entire process of photographing on wood, but the outlines of the method are as follows: Beat the white of an egg with two ounces of water, add ten grains of ammonium chloride, and filter. Moisten the block with water, rub with Chinese white, and smooth the surface*

when dry. Now flow on the albumen and allow to dry. Sensitize with the silver solution, dry and fume, and the block will be ready for printing. For details of process, see "Silver Sunbeam," page 526.

Q.—A. C. J. writes: Will you tell me, through the columns of the BULLETIN, if good portraits can be made on Eastman's bromide paper, that can be burnished and finished the same as the silver print? And is there any other kind that will take the place of albumen paper, that any one can use for printing on these dark days. Also are the argentic dry plates reliable? I want to use 5 x 7 size. Where can they be bought outside New York City? Will Anthony's Common-sense Binder for BULLETIN hold a whole year's numbers.

A.—Messrs. Eastman write us that their "Permanent bromide paper is admirably adapted for contact prints, and can be burnished the same as albumen prints." In regard to the argentic dry plates, our Mr. E. M. Estabrooke tells us that he thinks them as good as the old collodion plates, and he is considered the best authority on the subject. We do not know where they can be obtained outside New York City; but our publishers can supply them to you. Anthony's Common-sense Binder will hold twelve numbers of the BULLETIN.

## Views Caught with the Drop Shutter.

A NEW edition of Dallmeyer's pamphlet "On the Choice and Use of Photographic Lenses" has just been issued by our publishers. It is full of valuable information to the users of lenses, and this edition contains a large amount of material not found in the former issues. It

is small octavo, and contains 45 pages of closely printed matter with a number of very valuable tables.

WE lately received the following note from our Mr. T. C. Roche:

During my stay in Chicago, I was invited to visit the work rooms of the ELECTRIC LIGHT PHOTO PRINTING COMPANY, 296 Dearborn street, who have recently started. They have the most complete arrangements in the West for printing by artificial light. Having had a dynamo purposely constructed for photographic operations, as well as all kinds of printing, they are enabled to make all the negatives they require with a very short exposure. There is no question but that the electric light will be more extensively used in the future. This concern make enlargements by all known processes.

T. C. ROCHE.

THE EASTMAN DRY PLATE AND FILM COMPANY have just issued a neat little pamphlet giving directions for the use of their permanent bromide paper. It is filled with interesting information and is well worth having.

Mr. RICHARD WALZL, of Baltimore, recently paid us an interesting visit. His grand and handsome studio in Baltimore is the admiration of all who have seen it, and we heartily wish friend Walzl all the success that his enterprise so richly deserves.

Mr. G. M. BARNEY writes us as we go to press that an AMATEUR CAMERA CLUB has just been organized in Springfield, Mass. We are very glad to hear of this and wish our friends every success. Let the good work go on.

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NEGATIVE ON  
STANLEY'S NEW LIGHTNING PLATE,  
BY J. HALL, WINDSOR GALLERY,  
P. G. KORTHEUER, OPERATOR.

PRINTED BY H. O'NEIL,  
ON THE CELEBRATED EX. BRILLIANT  
N. P. A. PENSE PAPER.

"Tobogganing."

# ANTHONY'S Photographic Bulletin.

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Prof. CHARLES F. CHANDLER, Ph.D., LL.D., *Editor*.

ARTHUR H. ELLIOTT, Ph.D., F.C.S., *Associate Editor*.

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DECEMBER 11, 1886.

Vol. XVII.—No. 23.

## PHOTOGRAPHY THE HANDMAID OF ALL THE PHYSICAL SCIENCES.

BY REYNOLD W. WILCOX, M.A., M.D.

THERE is no physical science of which it can be more truly said that it is the handmaid of all others, than of photography. Based as is the science of photography upon optics and chemistry in its larger part, yet both optics and chemistry have been advanced by it. In chemistry especially, the reactions of various compounds with each other have through its influence been more carefully worked out, reactions often gross, easily detected by the senses; but as well the reactions of the silver compounds, when the fleeting sunbeam or the glare of the electric arc have left their subtle, but lasting, impression—changes so subtle that even their very nature is to-day a matter of conjecture and discussion. Nor are we limited to those objects within our grasp, but, thanks to photography, with spectrum analysis the distant stars reveal their composition as clearly and as surely as if their substance could be placed in the test tubes of an expert chemist. During eclipses of the sun, its corona has been studied by spectrum analysis and photography. The modern dry plate, allowing of instantaneous views, and improved lenses, permitting the use of a shorter tube, have simplified the necessary processes. Much work has been done in photographing double stars and nebulae, and lately a systematic mapping out of the whole heavens by photography has been proposed. In optics, careful studies of refraction, practical workings out of formulas have been made; but the rapid gelatine dry plate of to-day has obviated in a large measure the necessity for study of lenses in regard to rapidity, so that, in this direction at least, relatively, photography will not make as steady advances as in others. Need it be recounted how botany, geology, mineralogy, and zoology, vertebrate and invertebrate, are indebted to photography for accurate and calm portrayal of facts. One need only to refer to textbooks and monographs on special subjects—the more recent the more positive is the evidence. Not in photography alone, but as well in the many and allied processes for manifold reproduction do we find science's most eager and efficient handmaid.

In noting the advance of physical truth as it has been brought about by the student in his library, the worker in his laboratory, it is well to ask how much this advance has been brought about by photography. On looking through the list of members of the Society of Amateur Photographers of New York, one can

hardly fail to realize how various are the vocations of those whom photography counts as her devotees. In many cases, doubtless, the aid that photography could give in the pursuit of chosen study was the ruling motive for its practice. How many instances too are there of photography, having been adopted only as an assistance, becoming a ruling passion, outshading in its extent the former occupation.

In the science and art of medicine, photography has been an efficient aid, but principally in the grosser and more pronounced fields. The ingenuity of French, assisted by the rapid plate of to-day, has served to accomplish an apparently impossible feat, the photographing of a human larynx both at rest and in performance of its functions. In diseases of the skin, thanks to the painstaking work of Piffard, we have accurate portrayal of distribution and configuration of lesions. Orthochromatic photography, so called, if it is ever attained, will allow this method of illustration to supersede all others. Thompson, by means of an ingeniously contrived apparatus with which he can make six views per second, has photographed the hearts of various animals—kittens, rabbits, pigeons, dogs. While this has thrown much light upon the normal workings of the heart, it has also permitted the action of certain drugs (glonoin, chloral) upon the heart to be observed. He has also studied the normal movements of the intestines.

In remedial surgery—the surgery of deformities—the vivid imaginations, stating it mildly, of optimistic men have been curbed, and that department has received valuable and permanent advantage from the employment of photography. Yet even now the illustrations of “Before and After” bear striking resemblance to the wood-cuts frequently found in the advertising columns of our daily press. In the department of nervous diseases, the work of Charcot, valuable as it is, has been made of greater importance because of his use of photography in the illustration of his monographs and lectures. Successful teaching in medicine means appealing to the eye as well as to the ear, and his photographs of patients in various stages of hysteria and hystero-epilepsy are more eloquent, and make greater impression upon the physician, than pages of most interesting and carefully written text. The “*Iconographie Photographique de la Salpêtrière*,” by Bourneville et Regnard, will endure as long as the science of medicine itself, as an example of the accurate and complete aid that photography can give to medicine. The physiognomy of disease, notably of mental disease, has been carefully portrayed by several workers in that special department, notably the plates of Hamilton, giving typical illustrations of insanity.

In one field we must acknowledge great disappointment, in that what seemed reasonable expectations have not yet been realized, namely, in the photographing of microscopic objects. When only a few years since it was demonstrated that no especially constructed apparatus was necessary, but that with almost any good microscope, the eye-piece being removed, the tube fitting closely in the lens board of the camera, photographs could easily be taken, it was earnestly hoped that a new impetus would be given to investigations of healthy and diseased tissues. But little has been done, and to-day there lies open an almost unexplored field for the future worker.

In closing, we would impress upon the reader the great work that every experimenter and every investigator is doing for photography, in that not only does he contribute to its advancement, but as well, indirectly, places every worker in physical science under obligation to him.



## EDITORIAL NOTES.

MR. FRED. E. IVES, of Philadelphia, whose experiments on color-sensitive plates have been described in the pages of the *BULLETIN* from time to time, has collected all his published material and reproduced it in a neat little pamphlet, a copy of which is before us. This contains the various articles published since the year 1879, with a number of illustrations showing the merits of his method of procedure. The illustrations are reproductions of photographs of colored objects, chromos, and the solar spectrum. Of the latter he has given a silver print, that forms the frontispiece of the pamphlet before us, and shows the Fraunhofer lines from *a* to H, and a considerable distance beyond the latter into the violet. The negative that gave this print was made upon a chlorophyll-eosine plate, and shows the action of the red in the spectrum to be greater than violet, the exact reverse of the negative that would be obtained with an ordinary photographic plate, in which case the violet would produce the greatest chemical effect. Those who are interested in orthochromatic photography should not fail to study Mr. Ives' latest results with chlorophyll-eosine.

MR. J. F. RYDER, of Cleveland, has kindly favored us with a photograph of the handsome cup which he received as a prize for the pictures that he sent to Braunschweig, Germany. It is certainly a most beautiful object, and well bestowed upon its possessor. With true German instinct as to the fitness of things, the design is a very artistic one. The base of the cup is in the form of a tripod, fashioned after vine tendrils and leaves, with nuts (apparently filberts) set between each of the feet; above this is a leafy circle, part of the leaves turned downward and part upward, supporting a beaded ring of more jointed vine tendrils and leaves, above which comes another circle of leaves, which supports the cup. The cup itself is in the form of an ostrich egg, surrounded a little above the upper half with a finely-wrought circle of chain-work design, from which hangs three handsome inscribed medallions. The cup is surmounted with a crown of leaves, in the midst of which is a nut of the same design as those set around the tripod base. Altogether this is a most beautiful trophy, and we must congratulate Mr. Ryder upon his well-earned success.

It appears to us that something of this kind—a beautiful cup—would be a capital thing to be awarded as a grand prize by the Photographers' Association of America to the best set of pictures by the member who already holds a gold medal of the association.

THE coming exhibition of the Society of Amateur Photographers will be an excellent opportunity for some of our professional brethren in New York and vicinity to show what they can do in our beautiful art. The exhibition is to be held in one of our large galleries and every effort will be made to make it a success. Boston and Philadelphia will doubtless be well represented, and we shall be glad to see our New York artists show some of the fine work that we know they can produce. The rules of the exhibition will be found in our report of the proceedings of the Society of Amateur Photographers.

IN one of the reports of the English photographic societies lately, we saw an account of a method of preparing gelatine solutions so that they will keep without decomposition. Mr. George Smith gave a demonstration of the method of

making lantern slides by the Woodbury process and incidentally called attention to a bottle of ink he had been using, which contained gelatine, and had been preserved many months without decomposition. He believed the decomposition of the gelatine to be due to bacteria, and during the past two years had used a very small quantity of mercuric chloride (corrosive sublimate) to preserve various gelatine preparations. This mercury salt is well known to those who work with bacteria as a most complete preventative and destroyer of that kind of life. We think that probably some of our readers can make use of the idea; but care must be taken not to bring the mercury solution into contact with silver prints, because it will bleach them. It might be found useful on carbon pictures, which appears to be the use made of it by Mr. Smith, and in the preparation of carbon-gelatine ink. This latter ink is most useful for marking anything that is to be kept a long time, as age does not effect its blackness.

It may not be generally known to our readers that "Simeon's" and "Winterthur" gelatine are one and the same. Mr. Simeon was in the Winterthur factory, but left it about two years ago, so that the name "Winterthur" is the one that his gelatine is now sold under. We note that some writers still use the term Simeon's gelatine when they mean Winterthur.

WE have before us a copy of the last edition of Dallmeyer's pamphlet on "The Choice and Use of Photographic Lenses." In addition to the valuable material in the former editions, we note much that is new; especially tables for reducing and enlarging; conjugate foci; relative intensity of lenses; and quite a number of others. We are very glad to possess this most useful little work.

### LETTER FROM GERMANY.

BY DR. H. W. VOGEL.

*Ferrous Oxalate and Pyro Developers compared—Black Stripes on Dry Plates—Orthochromatic Plates in Landscape Photography—Orthochromatic Photography without Yellow Screen—Latest progress.*

MANIFOLD have been the controversies about the advantages of the ferrous oxalate or pyro developers for dry plates. England and America give the pyro the preference, whereas the ferrous oxalate finds most favor on the Continent of Europe. I have used both, and many times was led to believe by the formulas for the pyro developer that it required only half the time of exposure of the oxalate. Still much depends upon the character of the plates. I have had emulsion plates that would not stand pyro development, giving green fog, while they could be developed without fault in the oxalate.

Lately a number of interesting experiments have been made by Mr. Gädicke, of this place, about the advantages of one or the other of these developers. He exposed a number of his plates in the sensitometer an equal time, and developed partly with iron and partly with pyro at the same time. For his pyro formula he took the strongest with carbonate of potassium, as follows:

No. 1.

Pyrogallie acid .....	3	grams.
Sulphite of soda.....	20	"
Water .....	40	"

Potassium carbonate.....	5 grams.
Water .....	40 “

Of these solutions he applied 2 c.c. of No. 1, 4 c.c. of No. 2, and 36 c.c. water.

For the ferrous oxalate developer he took neutral oxalate of potassium solution, 1 to 4, sulphate of iron solution, 1 to 3, and mixed three parts of the former with one of the latter.

The first trace of the picture appeared with pyro in 24, with iron in 14 seconds. Both plates were left in the developer for five minutes, when they showed finally exactly the same sensitometer number, the one of the pyro being only a little stronger than that of the iron.

Pyro has therefore no greater sensitiveness than iron.

But the pyro shows another character. Gädicke observed that the upper numbers, 1, 2, 3, 4, showed very little difference with the ferrous developer, so that all appeared in about the same density, but that the pyro developer, although producing less density, gave a much better and more distinct gradation. On the other hand, the numbers 13, 14, 15 and 16 were given much weaker by the ferrous oxalate than by the pyro developer.

The question now is: Which picture is the most correct one? Gädicke, with regard to his sensitometer, consisting of sixteen papers placed terrace fashion, one upon another, and numbered 1 to 16, made the following observations. If two equal paper sensitometers are placed one upon another, so that 1 is upon 16, 2 upon 15, etc., and they are observed by transmitted light, the light will have to penetrate upon the first field,  $1 + 16 = 17$ , the second field,  $2 + 15 = 17$ , etc. That is, upon all fields 17 thicknesses of paper. As a consequence, all fields of two sensitometers placed over each other have an equal tone. If two equal negatives are made from one of these sensitometers, and they reproduce the light values of the several fields correctly, they should show also, placed in a similar way upon each other, in their transparency an even tone for all fields.

If the emulsion works too hard, giving too much light and not sufficient shadow, the fields 1, 2, 3, 4 will become too dark, and the middle tones will act too light, that is, the surface of the two negatives will be very dark at both ends and very light in the middle. But with an emulsion having harmonious action, showing the sixteen different tones, an almost equal tone will take place. The emulsion used here showed sixteen well graduated tones, reproducing almost the tone picture of the sensitometer.

The preceding observation was now applied to the negative developed with pyro, as well as with iron, to find out which method produced the most correct picture of the sensitometer, both being near the truth. It now appeared that the negatives developed with pyro gave an almost equal tone by placing them upon each other, while those developed with iron were much darker in the rows containing 1, 2, 3 and 4 than the middle fields; that is, pyro develops the tones naturally and true, while iron develops the high lights too strong, giving hard negatives.

Practical photographers may put little faith in the sensitometer, therefore some practical portrait experiments were made by Mr. Gädicke by taking the same portrait twice, and developing one plate with iron the other with pyro. Mr. Fechner, an excellent portrait photographer, assisted him. The result was that



the iron negative in its black color appeared much harder alongside of the brown pyro negative.

The proportion of the black dress to the face and the white parts of the picture showed much more harmony in the pyro negative. During the development with iron the face and fleshy parts became so black that the several tones could not be distinguished, and the development had to be finished by good luck and not experience. The pyro negative is so transparent that one can easily judge when to break off further development without losing too many tones in the flesh. The fixing takes a little longer with pyro, but the film is more solid, the pyro-gallic acid possessing tanning properties.

Although the pyro negative appeared to be much thinner than the iron one, the former had more strength, taking thirty-five minutes for printing, while the iron negative took only thirty minutes.

Mr. Gädicke has also made a calculation of prices, according to which one liter of pyro developer will cost only three-fourths as much as the iron.

It is beyond doubt that the advantage has to be ascribed to the pyro developer.

Many practical photographers will very likely not agree with the results of these experiments, and it has to be admitted that, as already mentioned, different emulsions will show different conditions. But lately I had an opportunity to prove the correctness of Mr. Gädicke's results. I had to take a number of plaster of Paris busts. Both methods of development were tried, and indeed the pyro development gave much handsomer gradations in the high lights than the iron.

In my last letter I wrote you about the black margins on dry plates. Besides these, there have lately been discovered still other black things by Mr. Wight, a very experienced amateur of this place, which are just as disagreeable and hard to remove.

Mr. Wight showed at the last meeting of our society, different landscape negatives having a black, but not very sharp, stripe right across the plate. This stripe corresponds with the place where the plate holder slide has a hinge, and appears only when the plates have remained in the holder for a long while. If left in only a short time, they did not show at all. The supposition was that light passed through near the hinge, but a careful investigation showed that this was not the case. Light passing through such a small space would not have the width and undefined edge of the stripe. Even the supposition that the brass of the hinge might have acted upon the plate, did not appear probable, because it is not upon the side nearest to the plate.

Mr. Wight remarked that the fault appeared first after the hinges of the holder had been renewed. Some are now of the opinion that the fresh surface, when cut, develops in a larger degree the scent peculiar to mahogany, and this causes the fault.

Mr. Wight remarked that he had a similar idea, and therefore exposed the slide to the open air for some weeks, but without success.

I have tried lately to produce this fault artificially in my plate holders, but did not succeed. The best is, at all events, to use plate holders without hinges, as you do in America. This blackening would scarcely ever take place with a hard rubber slide.

Much has been said in my former correspondence about color-sensitive plates, but so far only those have taken general interest who had to copy oil paintings or

colored objects. Lately the color-sensitive plates have commenced to play a *role* in landscape photography. At a meeting of our society fourteen days ago, a panorama of the Ruhr, that taken by Mr. Goebel of Wittin, with azalin plates, was shown in comparison with an older one taken about sixteen years ago upon an ordinary collodion plate. The latter appears, on account of the moist atmosphere generally existing in the Ruhrthal, foggy, not only in the background, but also in the middle part, so that the details can hardly be recognized. But in the new views taken upon azalin plates there appears to be a foliage in the background, which is almost black in the old negative. The middle ground and horizon are both distinctly clear. Every tree is distinctly drawn to the greatest distance, while in the old pictures there is nothing but fog in the distance.

These results are not the only ones. Schlitzberger, of Bielefeld, obtained equally successful results with orthochromatic plates for landscapes. During my tour through Norway, I made the observation that by taking views (distant mountains) enveloped in fog, the azalin plate, by quadruple the time of exposure through yellow glass, will give better results than the ordinary plate.

But the latest and most interesting work in this field, is that Obernetter and I have succeeded in preparing orthochromatic plates which need no yellow glass. In this direction orthochromatic photography has advanced considerably. But still more. The new orthochromatic dry plates surpass the ordinary plate decidedly in sensitiveness, so that now even instantaneous pictures can be taken with them.

Very few will believe this upon first reflection. But as proof this can be given, I have published in the first November number of the *Photographische Mittheilungen*, two views of the same landscape, one taken with an ordinary plate, the other upon an orthochromatic plate without yellow glass, both of equal exposure, and finished in lichtdruck. So every one can convince themselves about the supremacy of the color-sensitive plate.

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### THE PACIFIC COAST AMATEUR PHOTOGRAPHIC ASSOCIATION.

*To the Editors of the BULLETIN.*

FROM the long silence that has existed on photographic matters on the Pacific Coast, you may think that the ambition of the Pacific Coast Amateur Photographic Association was of an ephemeral nature, and that the association, which showed promise of much growth, had languished or died a natural death. But if such be your thoughts, let me by this letter change them, and inform you that the child you erstwhile knew, has grown to be a vigorous and lusty youth and hardly recognizable, and especially in the character of its work. Nothing shows how much progress it has made, as a comparison of its early productions with what is now being monthly shown at its interesting meetings.

During the last summer the association moved from its one small room, which it had occupied for a couple of years, and has now exceedingly comfortable quarters, with a general reception and meeting room connecting by folding doors with a second room, which has a twelve-foot screen for showing lantern slides, and off this room a large and well fitted up dark room. The rooms have fine light in the day-time, having windows to the north, east and south, giving opportunities for copying and printing; are well furnished, and provided with burnisher, trimmer, an enlarging box made here, and a fine copying camera; and,

above all, a large reading table covered with all of the current literature of the day on photographic matters; and on the walls pictures, all photographic work, that show pure artistic sense and feeling. On occupying the new rooms, the association made a request that its members should each contribute a framed picture, and the response was generous, and the varied work—silver prints, bromides, platinotypes, and enlargements—makes a splendid showing, and the names of many of our association are gaining more than a mere local reputation.

The association holds each month a regular meeting, at which the attendance is large, and shows a continued interest in its affairs and a strong desire to learn to do anything that tends towards increased excellence of its work, and to contribute the funds necessary towards keeping up the association. At the last meeting, Mr. Virgil Williams, Artist and Director of the School of Design here, with great ability delivered the first of a series of lectures on "Composition and Art as Expressed by Photography," giving ample illustrations by blackboard drawings and suggestions, the result of years of study, which were listened to with great pleasure and the closest attention.

The frequent attendance of professionals at meetings of the club shows that relations are not strained with that body, and that we are still, as we started, purely amateurs.

Yours truly,

SIDNEY M. SMITH,

SAN FRANCISCO, November 22, 1886.

*Corresponding Secretary.*

### **SOME EXPERIENCES WHILE NINE YEARS A TENT PHOTOGRAPHER.**

By E. A. BONINE, *Los Angeles, Cal.*

"AN ISHMAELITE," a "Cheap John," you will say, after reading the heading of my article, but my logic will prove that I am neither. Four years in California and five in Arizona, spent in a tent—and as the experiences of the past crowd in upon me, I repeat the old Californian's lament:

"Backward, oh! backward, oh! Time in your flight,  
Make me a child again just for to-night."

In my long years of traveling I made it a rule, and which I adhered to with few exceptions, to go where there were no galleries; so I had good prices and of course some profit, which I have invested in a fruit ranch, and virtually sit under my vine and fig-tree, and pick my oranges and drink my lemonade at pleasure. These articles are not written to give new formulas or new ideas, but only to give some of the practical experiences of a wandering operator. I do not know how it is with other men, but with me, when men speak closely of themselves and their experiences, I keep quiet and listen, and most always gather some grain of truth, which gathering adds to our knowledge; and "knowledge is power."

I have not deserted the photographic art altogether, but print and sell my Indian pictures and my Californian views. My first tent had square ends and a ridge pole, material of white duck; my second tent was a brown 8-ounce duck; and the third one a brown and white striped one. The all brown proved the most satisfactory, because of the less transmission and diffusion of light. The second and third tent were made alike, and I can suggest no improvement after long use. The size was 12 x 32 feet, side wall 6 feet, and peak of tent 11 feet. I used two center poles and no ridge pole; ends circular, using 6 feet poles, 16 in number, having pins of  $\frac{5}{8}$ -inch iron driven in the ends; and these poles used on the outside of the tent, the pins running through rings which were sewed to the tent.



There was a ring at the bottom of every seam, and a pin and a rope at every seam, and three large guy ropes on each end fitting over the protruding center pole. We used 78 iron pins and drove them with a white oak mallet; we tried many styles of pins and preferred the simple hook 7, made of  $\frac{3}{8}$ -inch iron. The walls of the tent were not sewed to the top, but fastened at each seam with a common harness snap and ring, the snap hooking into the ring. A tent like the above, 8-ounce duck, with poles and pins, costs \$100 in San Francisco. But they will stand quite a heavy storm. I have never had my tent blown down, being at one time so near the ocean as to be able to throw a stone into it, and have seen many severe sand-storms in Arizona, but met no cyclones.

My outfit weighed about 2,000 lbs. I have used for years a very simple process for printing: silver bath, 35 to 40 grains to ounce of water, slightly alkaline with ammonia water; fume 30 minutes. In first washing, 2 ounces acetic acid to gallon water; neutralize gold bath with sal soda. For fixing I warm my water a little bit, so that after the hypo is dissolved it is slightly lukewarm, and when fixed put the prints into water of the same temperature and I get no blisters. I have asked the journals how to make paste and they generally told me to buy theirs; but I make mine this way: I dissolve starch and flour together, then filter through a coffee strainer and boil, stirring the while, and my prints do not peel up at the edges as prints often do if you use starch alone.

I will send you a print of my tent, which you may use as illustration if you like.\* I generally slept in my tent, and to this time a dozen drops of rain cannot fall on the roof, if I am in hearing distance, and I not waken; and more, it is almost an impossibility for me to sleep when it rains even now, and I have not been in a tent for a year. As soon as the rain drops began falling I had to be up and slacken my ropes, so that the tent shrinking would not draw my ropes; and then, as soon as she became wet, I had to tighten her up. My pins had to be watched so that they would not draw out. I could not always pick my location, and I have had a circus right in the middle of my tent—and no gate money either—putting my fixtures on the highest ground; having a canal right through it; trying to sleep between showers on top of a box; cursing the traveling business, and saying I would quit it and sell out to the first man who made me a good offer; but, strange as it may seem, I never met one man in my nine years' travels who wanted to buy me out who had the coin, nor one who wanted to learn the business. But next morning, the storm being over, and old Sol coming out in all his splendor, all nature having had a bath looking inviting, lovely and bright, we rustle around, get things in shape, and, forgetting the trouble of the night, buckle on our grit and go at it again.

I was once camped at Navarre Ridge, Mendocino County, California. There was a big rain-storm. A mighty fog covered the Pacific, which was in sight when clear; we could hear old ocean's swash on the beach below, hear its thunder's horrid growl and bellow as it lashed its waters through some rocky archway into some cavern it had been tearing out of the solid rock. It was a horrid night. I restaked my tent and went to the hotel and to bed. Arising very early, I found pigs had been rooting for earth-worms, and had gone into one end of the tent and rooted up the same, and just in that end I had my gold coin buried, \$175 (I always keep my cash buried while traveling). After a good search I found it, and was glad it had not been greenbacks, or it might have went to make pork.

\* Photograph received; but we think the author's description sufficiently lucid without illustration.—Eds.

# FORTY YEARS BEHIND THE CAMERA.

BY A. BOGARDUS.

(Continued.)

I HAVE made pictures of many of the prominent men of my time. I mention a few.

S. F. B. Morse. He, as is well known, was one of the earliest daguerreotypists. He often called to see if there was anything new in photography. I often made sittings of him. One day he brought all the medals he had received from the kings and potentates of the world, and I photographed them.

William Cullen Bryant came several times; was very pleasant, but not talkative; his language always as dignified as his writings.

Horace Greeley talked but little, yet was always willing to take any posture suggested, and wrote me a letter handsomely acknowledging the pictures sent him; but it is a job to read that letter.

Garfield was a large, well-made man. I well remember his coming to the sky-light; he was smoking a cigar, and wore a soft hat. He tossed the hat on an empty chair, placed his cigar on a mantel-piece, and said he was ready, and could give me twenty minutes. I made one 17 by 20 and two 8 by 10 plates, old process, in the time allowed. He wrote his name in my signature book, gave me a hearty shake of the hand, and was gone.

General Grant came on an invitation. He had just returned from his trip "around the world." He was, as ever, the quiet man. He removed a parcel of cigars from his breast pocket, laid them on a table, and, when the sitting had been taken, quietly put them back in his pocket, gave me his signature, and took his departure.

Hancock was one of the finest-looking and most dignified men I ever sat, very precise in his dress, and always carried on a pleasant conversation, asking questions in regard to the photographic process, in which he seemed to be interested.

Dr. Geo. W. Dixon, a prominent surgeon in his day, once brought a child to me for a daguerreotype. She happened to be a very cross youngster. I sent the picture to him. He nearly scared me out of my senses by coming in and saying, "Do you know what you have done, sir?" I thought I had done something dreadful. He soon relieved my anxiety by saying, "You have not only taken her likeness, but also her very character." Not many so honest.

Stand with me one day, not forty years, and see the work of the day. The first sitter is a down town business man. He can hardly spare the time to sit, but his wife insists. I make several sittings, and ask him if he wishes to see proofs. No, he knows nothing about pictures; just finish the best, and send two or three dozen.

Next a family of three.

Then a mother brings her boy and girl. The boy, on coming out from the screen, asks if it makes any difference if you do so [raising his hand to his face]. On asking him why he had done so, he said a fly was walking over his cheek, and he brushed him off. It does make a difference if you do so.

Five or six young doctors are each having sittings; as, one after the other, they pass behind the screen, each shakes hands with the rest and bids them farewell.

Two elderly ladies wish me to tell which I think is the oldest. No, no. Did attempt that once. Know too much to try it again.

Soon the Hon. Patrick Mulligan, member of Assembly elect, is announced. He says he wants his "pactur tuck ta be put in the *World*, and wants it moighty natural." Well, there may be the "makins" of a picture in his face, but where to begin bothers you.

I think the most annoying sitter that comes in the gallery is the "man old maid." He generally calls to ask when is the best hour to sit. He has not had a picture taken for years, and now only consents after the earnest solicitation of his friends. Perhaps in three or four months he comes again, to ask whether he had better wear a stand-up collar, or a turn-down, or a Piccadilly. He is told to make his own selection. Finally he comes dressed within an inch of his life. Several sittings are made, all good, and proofs are sent. The next day he stalks in very indignant, and astonished that you would send him such looking things; they are caricatures, etc. He would not think of sending them to his friends. What are you to do? You well know you cannot do any better. Perhaps the trouble is they are "horribly correct." After doing all that is possible, he generally goes away, feeling that you have failed to do justice to his fine personal appearance, and perhaps tells you he is going to try another artist. In such cases, I generally tell them if they fail to get a handsome one, to come back to me, and I will sit for them.

The conceit of some people is enormous. A mother once said at the desk that her child must not be treated as an ordinary child; he was a very superior being; shewished that to be understood from the beginning. He was a fine boy, but where the "superior being" came in did not show to the naked eye, as he refused to be taken, and kicked his mother three or four times while under the sky-light.

You are expected to make the best view of every face; you have never seen the parties before; they want to sit natural. How do I know what is natural to each? What would be natural to one is not natural for the next.

Working steadily until 2 or 3 o'clock, you begin to want your lunch. No chance. Then you get careless, and want to get through, hurrying off each sitter. That's one reason I always tell people to come in the morning. Not a real dinner, except Sundays, for fifteen years.

I have learned from experience that there is a great deal of vanity in mankind—yes, and in womankind, too. And the successful photographer must cater to that vanity, be it ever so whimsical, and give them what they desire, as near as possible, even if they are unreasonable.

I have learned that old people wish to look younger.

Small men wish to look large.

Large ladies wish to look small.

Thin people want to look a little stouter.

Stout people wish to look thinner, etc.

I only remember of one picture being brought back because it was too young.

But, oh! how many because they were "too old."

But these are special cases. The most of my experience has been with reasonable people, satisfied with a good picture and a correct likeness, be it old or young.



I well recollect a venerable judge and his wife having pictures. He was suited at once, but the old lady doubted as to so many wrinkles in her face. The judge looked at it, and said, "Mother, it is very perfect. If you had wanted a handsome picture, you should have commenced thirty years ago."

Pupils. During the daguerreotype days we had many pupils, and generally the first question asked was, "How long does it take to learn it?" Well, that was a difficult question to answer, for many would not learn it in a century. I have known some persons work away for years, but never made good work. I remember one young man from Jersey who stayed two weeks, but he did not seem to know any more than he did the first day.

Mixing chloride of gold. Always take the poorest.

There is romance in photography. A young gentleman has a picture. Soon a bashful young lady calls, showing one of his pictures, and wishes hers taken like that. We understand the case. Before long the now bride is taken in her bridal dress. Not very long before the baby is taken in its long dress; then in a short dress; in the course of time in his first pants; then in his uniform, when he goes to boarding school; and soon in that very important period of his life, when he first attempts a mustache at college; and soon he brings his best girl. And so you see it goes right on from generation to generation.

In old daguerreotype times, sitters did not have a dozen to distribute to friends, but must come every time they wished to give a picture to a friend. I remember a dashing young widow was brought at different times by three different gentlemen. I felt interested to know which should draw the prize. I found out; they soon both sat on the same plate.

A visit to Coney Island.

I sits you again, Mr. Bogardus.

Man and wife meet, getting pictures for Christmas.

Now, if it is a fact that a person long following a profession becomes so completely identified with it that his avocation is indelibly fixed in his personality, and you can tell at a glance that he is a shoemaker or what not; or, as the story by Rev. Dr. Van Dyck, of the old lady on Long Island, who had lived so long among the clams, and had eaten so many clams, that her chest rose and fell with the tide; or a story that comes from the West, that the cows in Nevada stood so much in the water, that they became web-footed; then I shall expect some day to break out all over with pictures.

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## ON PHOTOGRAPHING GENRE AND STILL-LIFE SUBJECTS.

BY JOHN BARTLETT.

(Continued.)

PICTURES in which living forms are introduced as the actors—the true *genre* pictures—are the most difficult to produce; but so many beautiful results have been effected by members of this society, that I was induced to work in this direction.

I found that the choice of a suitable subject for an incident picture—that is, one which tells a story—is not a very easy task.

True, there are certain rules of art governing compositions which are applicable to photography as well as painting; but the first step to be taken is to secure a definiteness of pictorial intention. This once secured, our ideas will have proper course wherein to flow. But we want a subject first, a name for our picture.

We have found one of the best ways to secure it is to read over the names in a catalogue of paintings, and try to form some conception from the title what they may be like.

The Dutch and Flemish painters will be found very helpful; and as engravings of their works are plentiful, you may go to them for suggestions; but it is not a good plan to copy any picture outright. You may take ideas from them in the arrangement of drapery, furniture, etc., and the pose of figures, which you may translate in your own terms; but the objects of our every-day life, as well as our costumes, are as picturesque, although not as quaint, as those they depict.

The balance of lines secured by the pyramidal form of composition is generally regarded as the best, but this contrast of lines should always have the accidental look of nature, and not suggest an artifice. Some picture makers are as much slaves in the building of their pyramids as the old Egyptians in the days of Cheops.

A repetition of straight lines is not pleasing. A shelf, or the edge of a straight table, may easily be broken by some overhanging object which finds an appropriate place upon them.

The picture is not half so effective when evenly lighted all over, as when certain portions are thrown into shadow. The shadow may be broken up by objects, but none of them should be glaring or so prominent as to attract attention. All in shadow should be quiet and subdued, by which means the perspective of the picture is better secured, and the figures have relief, without being sharp against the background.

The side of the room not represented may be imagined open, as in many paintings of the Dutch school. The figures should not be so large as to appear cramped in the space allowed them, nor so small as to look stogy.

I have found the best light upon the subject can be secured by making an inclosed space in the open air, rather than in an ordinary room. Let the sun be behind the space fenced off, so that, while it does not shine directly in the lens, its rays sufficiently illuminate the ground in front to lighten up by reflection the countenances of the figures on the little stage appropriated to them. Shut off, as in an ordinary room, the top light as much as possible, otherwise there will be heavy shadows under the eyes. The background, which may be of board covered with gray paper, should run off at an angle to the horizontal line of the picture.

In the shadowed part of the picture a good many things ordinarily found in a dwelling room may be simulated by artifices; such objects as would require much trouble and expense to actually produce. For instance, the idea of a fire-place with a mantel-piece above it may be made by putting a dark piece of cloth, of the size and shape of the opening, against the gray paper of the wall, and placing over it a shelf covered with light terra-cotta paper. The illusion is heightened by having a kettle or pitcher, or some other object associated with a fire-place, in front of the sham opening. The object, of course, should be lighter than the dark background, but not so prominent in its tone as to attract special attention. Similar artifices will readily suggest themselves. You will soon learn by experience the particular shade a color will take when photographed. Your own devices are a great deal better than the shop accessories, which are generally so profuse in their display of cheap carving that they look out of place in a domestic scene.

In grouping the figures, you will find that it does not look well to have the

head of one directly above the other in a perpendicular line; or, where three or more are introduced, to let the heads, when joined by imaginary lines, make any regular shaped geometric figure, as a rhombus or square.

I shall say nothing about the means of securing good expression in the countenance of your actors, but merely warn you against theatrical simulated passion. The excellency of *genre* pictures consists in the absence of affected and mawkish sensationalism and stage trickery. The make-believe can always be told from the real. For this reason you will succeed better with children and elderly persons, because their expressions are generally natural.

The photographing of flowers is one of the most delightful occupations in which to exercise one's taste. They are so beautiful in themselves, capable of such variety of lovely combinations, and offer so broad a scope to the fancy.

True, we cannot rely upon the sensitive film to fairly set forth the lovely colors of the flowers in their true tone relations as they appear to the eye. The bright red of the rose, the brilliant yellow of the buttercup, when transplanted by photography, are profaned to black. So, if like the painter, we arrange our bouquet, and let these colors represent the high lights, we shall find that the sensitive plate inverts the color-relation. But nature is so lavish in her largesse of gradations of the same color, that we have ample scope for selecting such as will give us any desired shade in the photograph.

There are varieties of yellow and red in flowers which give most agreeable deep grays. The photographic tone is, of course, much lower than in nature, but it is just for this reason that they are suited for the deeper half shadows. Blue flowers will take white or pale gray, and may therefore be harmoniously grouped with white flowers in managing the high lights. The dark blues, the pale buffs, the light lemon, purples, light and dark, together with pink and tea roses, make a rich variety of pleasing half-lights.

A little experience will teach us what shade a color will take when photographed, which will vary with the amount of light to which it is exposed.

For instance, a dark blue flower will take white, or nearly white, in a strong light; but in the shadow of other flowers will appear gray.

In the selection of white flowers give the preference to those having the surface broken up, to catch the shadows, like the button daisy, the chrysanthemum, and the aster.

Sometimes flowers are very arbitrary, as far as photography is concerned, in choosing for themselves two colors which do not take well together.

There is the ox-eye daisy, or field flower, with its mound of gold, set round with milk-white rays—a great favorite with the poet, but I fear not with the photographer. The bright rays retain their brilliancy, and the damascene is rendered beautifully, but the heart of gold tarnishes.

Now a device, "an art which doth mend nature," will help us.

We dust a little powdered chalk upon the center of the daisy until the deep yellow is diluted to the required paleness.

The great aim in the arrangement of a bunch of flowers for photographing is the proper massing of the lights and shades.

The alternation of light and dark flowers is unpleasant. The grouping always looks well when the bouquet is divided diagonally as much as possible in two main divisions of light and shade, the transition in each being gradual—the dark blending into the light, the light into the dark.



The massing of the lights and shadows is best secured by using a good deal of the foliage for the shadows. There is an almost infinite variety in the shades of green, so that the gradation is not difficult to secure. After the arrangement of the shadows is completed, portions which need lighting up may be enlivened by wetting them with water, so that they reflect more light.

It is a common practice to fasten the flowers against a wall or upright screen by means of pins and strips of paper, but all such arrangements prevent the flowers from having the careless gracefulness of nature, to say nothing of the trouble of fixing them in any desired position.

Accident suggested a better plan. Having laid some flowers upon a table, and noticing the graceful manner in which they disposed themselves, I thought I would leave them lie as they were, and point the camera down at them.

A platform was rigged up, consisting of an old camera stand, with the base-board fixed in an upright position, so that the lens came vertically over the center of the flowers. A step-ladder was used to climb up and look down upon the ground glass in focusing, and a phantom shutter, with the gum band off and the upper slide removed, in making the exposure and in shutting off the light.

An ordinary cap would have a tendency to drop off in such a position; but the little catch on the shutter held the flap against the opening of the lens until everything was ready for exposure, when the flap released, fell by its own gravity to a vertical position.

The background was a piece of mat surface, greenish-gray paper.

The principal light which fell upon the flowers was allowed to come in from one side only. This gave most pleasing shadows upon the background, which helped to give the flowers beautiful relief.

It is not necessary to have the sun shining upon the flowers to get shadows; in fact, it is better to have them in the shade, and to secure the shadows by contrasting the lights. The early morning hours, or evening twilight, when the shadows are lengthened, give the best results.

Very pretty effects may be got by arranging the flowers in suitable vases. Some care is needed in managing the light to prevent unpleasant reflection from the rounded surface of the vessels.

Spottiness is more difficult to get rid of with fruit than with flowers. Sometimes it will be necessary to concentrate the light upon certain portions by means of card reflectors, so as to get a pleasant contrast of light and shade. In one instance I used a large lens to get a center of light.

A bunch of grapes is very difficult, because each grape catches the light, and claims individual attention, and the massing of broad lights and shadows is hard to secure. I only obtained tolerable results by selecting two bunches of grapes, one of a very dark variety and the other of a light green. The resulting photograph was heightened by choosing suitable vine leaves and tendrils for a setting.

The grapes were laid upon the table like the flowers, and arranged so as to cast a shadow upon the background, the dark variety being kept in the shadow.



*All communications for the columns of the BULLETIN should reach us on Monday preceding the day of issue, to insure their publication at that time.*

## THE CHAUTAUQUA SCHOOL OF PHOTOGRAPHY.

BY CHARLES EHLMANN.

[Read before the Photographic Section of the American Institute.]

IN the western part of the State of New York, upon a charming and well-wooded plateau, sloping down to a beautiful lake, is situated the Chautauqua Assembly Grounds. The name of the place was taken from that of the lake, which at an altitude of 1,400 feet above the ocean, and 700 feet above Lake Erie, but ten miles distant, graces one of the loveliest and most picturesque spots upon this continent. The grounds proper are laid out in avenues, streets, and groves, interspersed with lawns and flowered plots, occupied by the Assembly's buildings, numerous cottages in the modern styles of architecture, and other domestic buildings in rustic order, like log-house and tent. Thousands assemble here every summer; coming from all parts of the Union; the old and the young, from hillside and dale, from cities, the far off settlements in primeval forests, and from the broad prairies in the West. Every branch of business and nearly every stratum of society is represented; the pulpit and legislative hall, plow, anvil and loom, the counting-house and the class-room. All these people are attracted to the modern Mecca by one desire and with one purpose: to obtain knowledge, or the scientific education denied to many in their youth by adverse circumstances, but which the Assembly offers to all.

What idea leads this Chautauqua movement? It seeks to establish the principles of Christianity, and of culture in individual as well as in the national life.

With this idea as a principle, and a full belief in divine providence, Chautauqua is erecting a magnificent structure. The outlines of studies from an embryonic to its present state of perfection have ever been a training of teachers in evangelical and philosophical Christianity, and a giving of knowledge in classical and scientific departments.

Year by year new departments of instruction are added in harmony with these outlines, and Chautauqua assumes now a positive attitude towards science and good literature, aiming to promote habits of reading and studies in natural science and art, and in fact upon every field of learning. Chautauqua diffuses universal knowledge, and therefore well deserves the title proposed by Joseph Cook. It is a university indeed!

The various readings and studies are theological and pedagogic, comprising modern and ancient languages from English to Sanscrit; abstract sciences, like mathematics, astronomy, physics, chemistry, geology and meteorology; political economy and literature. There are schools for drawing and painting, in architectural and floral designs, landscape portraiture and still life. A museum at Newton Hall contains archæological relics; specimens of modern art; and mineral, botanical, geological and paleontological collections. A library with maps and charts aids the student in his pursuits. A college for music seeks to cultivate its members in that art, and what above all has given impetus to the establishment of a school of photography, is the studio of Edward A. Spring, who instructs several classes in the art of clay modeling.

Through the instrumentality of Charles Barnard, Esq., seconded by several influential Chautauquans, application was made successfully to the Assembly, and with the special patronage of Chancellor Dr. J. H. Vincent, the School of Photography, with Charles W. Hull, Esq., of New York, as its superintendent, became a fact. Charles Ehrmann was appointed instructor. Professor Randall Spauld-

ing's "First Lessons" was selected as the text-book of the first class, and the superintendent issues instruction for home studies.

The Chautauqua idea is strictly carried out in this as in all the other departments. Instructions in theory and practice are given at the grounds during summer, while during the winter months scholars are advised and information given to them by correspondence. The general course is concluded by examination, a public exhibition of the products of the school, and an award of diplomas.

Well supplied with all necessary photographic instruments, chemicals and utensils, I left New York for Chautauqua the latter part of July of the current year. When I arrived, the Assembly and its several departments of instruction were at the height of working order, almost every one of the 18,000 people present being fully occupied with studies. A laboratory and class room were soon assigned me, and after the existence of the school had been announced, and the proper credentials were given to me by the authorities, I was ready to receive scholars. Those admitted were formed into two classes. Ladies and boys were instructed in the morning, while the afternoon hours were devoted to gentlemen. Several single lessons were given between times.

A photographers' day had been set apart, and announced for August the 16th. A number of amateurs and professionals from New York, Pennsylvania and other States, some of whom had come purposely to give *eclat* to the festivities, contributed much to the success of the day. After due introduction by Dr. Vincent, the photographers and their numerous friends assembled in the Children's Temple, where the exercises of the day were opened with a salutatory by Mr. Charles Barnard, of New York. Professor Spring, of New Jersey, spoke on "Photography Applied to the Fine Arts," and the instructor of the school read a paper on "Photography an Auxiliary to Scientific Studies, and an Aid to the Graphic Arts." Demonstrations were given afterwards with the camera, which were followed by an instructive colloquy between experts and those desiring to be informed. Later in the day a 17 x 20 group was taken of the graduates and professors of the literary and scientific circle. The photographers' day, and previous to it the Congress of American Microscopists, among whom were a large number of eminent photographers, gave decided impulse to our school.

The mode of teaching was, so far as it could be done, that proposed by Professor Spaulding, for in the majority the pupils were beginners indeed. Some of them had never handled a camera, and there were but few who had any definite knowledge of photographic matters. At first camera, plate holder and tripod were shown, their construction and use explained, and an hour devoted to the practice and handling of these implements. After having described how to ascertain the focus; the purpose of the diaphragm, and how to use it; the application of the swing back, and a few hints as to the selection of views, instruction on illumination and perspective were given. Herewith ended the art lesson.

Preparatory for further instruction, advice was given to read the first two chapters of the text-book. The succeeding lesson comprised questioning on the matter read, introduction to the dark room and the handling of utensils by ruby light. The meantime general photographic principles were explained; the nature of sensitive substances, the action of light upon them, and particularly upon silver haloids; gelatine emulsion and how to prepare it; and the action of developers. These instructions were illustrated by practical demonstration.

In such and similar manner the course of instruction was proceeded with,



until the pupil had, by diligent reading and daily practice, obtained knowledge and skill enough to enable him to work independently.

To accustom the scholar to the ruby light was one of the severest difficulties encountered, and all dark room manipulations had to be practiced first in daylight.

With the development of plates I proceeded in such a way as to raise at once the ambition of the scholar and a love for his work. I also impressed upon them the necessity to develop with composure of mind and a careful observation of the different phases of the operation, and how and when to employ accelerator and restrainer. Most beginners are very hasty and impatient while developing, and frequently they had to be admonished in this respect. Generally I let them work altogether alone, merely directing occasionally or pointing out errors and faults on the finished negatives. With more advanced scholars I followed an old Chautauqua doctrine, which directs those of more experience to take charge of beginners, and give them the benefit of their assistance. The rule has worked quite well in practice, and we obtained thus quite interesting results.

In selecting views, bits of scenery, or studies from nature, no difficulty was experienced, as invariably artistic feeling and good taste were found to exist in all of the students. Convinced of a scholar's abilities, he was allowed to go on a trip independently, to select views according to his own taste, and to develop and finish the negative by his own judgment. With this mode I have succeeded at times very well. Master W——, a young gentleman, fourteen years of age, has made negatives of which he and, I dare say, the school may well be proud.

As an accessory to giving generally good results, I cannot but mention favorably the kind of plates employed in the school. They were the Carbutt "Keystone B;" slow comparatively, but perfectly reliable in their working.

Printing had at first been productive of serious thought; it was feared the lady scholars might be horrified at silver stains on fingers arising from handling the silver bath. I was however agreeably disappointed, for they all went to work with a good-will and energy scarcely to be outdone by professional printers.

Various are the applications to which photography is to be put by different scholars. While a majority of them consider it only to be a recreative pastime, some expect to use it as an aid in object lessons, or the study of botany; others again to make lantern slides or microscopic enlargements. The reproduction of line work was desired by some, and one wished to make photo-ceramics. As regards prints, the majority prefer those made on albumen paper, while others think the cyanotype to be the *beau ideal* of a photograph. Several were not satisfied with results only. The theories of photographic processes had to be explained to them, reactions taking place repeated in the test tube, and the results expressed by equations.

A great desire was shown by a number of members to be instructed in making portraits, which, however, on account of my scanty light in the school-room, could be responded to but insufficiently. As with the growth of the school a strict division into classes will become a necessity, the managers have concluded to establish with the beginning of next season one especially for portraiture, including the various styles of printing on paper, opal glass, and transparencies, also the enlargements on permanent bromide paper. Special attention will be given to photo-micrography and the lantern slide.

Orthochromatic methods, the most important and interesting branch of

modern photography, will be explained and practiced with landscapes and botanical specimens. If a demand should arise to learn the making of highly intense collodion negatives, reproductions of line work, the necessary facilities will be given to make negatives to be used for high relief printing, in connection with which at least the rudiments in zinc etching and lichtdruck printing will be given.

The attempt to establish a school of photography has met with good success, and our little institute has become very popular in Chautauqua. Judging from the many inquiries made on the grounds, and after adjournment of the Assembly, it is fair to suppose the applications for admission to the Class of '87 will more than double the number of that of last season, and largely swell the enrollments to the corresponding class.

The school and the mode of instruction is eminently directed by the Chautauqua idea, and subject to the authority of the Assembly. Photography has been admitted among the regular departments of the university, and the continuous success of the school is firmly believed by all.

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### THE LITERATURE OF PHOTOGRAPHY.

BY W. JEROME HARRISON, F.G.S.

(Continued from page 340.)

WILLIAM BLAIR, of Perth, was a solicitor, who devoted his spare hours to photography. He worked diligently at permanent printing processes, and effected several improvements. At the age of fifty he was drowned, in 1871, in the Tay; having plunged in to save one of his sons, an attempt in which he was successful though he lost his own life.

1869. "Manual of Directions for Printing in Carbon and other Pigments by Different Processes without Transfer." 12mo. 76 pp. Published for the author, at Bridgend, Perth. Price to subscribers, 2s. 6d.

W. R. BLAND was an optician, a member of the firm of Bland & Long, who had an old-established business at 153 Fleet street.

1862. "Practical Photography on Glass and Paper." Post 8vo. Bland. 1s.

Previous editions of this book appear to have been published, but I have not been able to trace them. A revised edition, in two parts, was published in 1869 by Negretti & Zambra.

THOMAS BOLAS is the able editor of the *Photographic News*.

1878. The "Application of Photography to the production of Printing Surfaces and Pictures in Pigment." (Six "Cantor Lectures" delivered before the Society of Arts, and reprinted from their Journal.) 4to. 15 pp. Paper cover. Society of Arts, John street, Adelphi. 2s.

1884. "Recent Improvements in Photo-Mechanical Printing Methods." (Three "Cantor Lectures" delivered before the Society of Arts, and reprinted from their Journal). 4to. 14 pp. Paper covers. Society of Arts, John street, Adelphi. 1s.

M. P. W. BOULTON, the grandson of Boulton the engineer—the partner of James Watt—wrote the following pamphlets to disprove the statements contained in a communication to the Photographic Society of Great Britain by Mr. W. P.

Smith (of the Patent Office). Mr. Smith believed that he had found evidence which proved that pictures of large size were produced at the former's factory at Soho (a suburb of Birmingham) about 1770 by some photographic process. The younger Boulton clearly shows that this statement is a complete error; although for a certain time about the year stated a Mr. Egington (in the employ of Boulton & Watt) did produce pictures by a "mechanical process," yet this process had nothing to do with photography.

1863. "Remarks on Some Evidence recently Communicated to the Photographic Society." 8vo. 6 pp.

1864. "Remarks Concerning Certain Photographs Supposed to be of Early Date." 55 pp., 3 plates. Second and third editions of this pamphlet were issued during 1864, containing 63 and 71 pages respectively, with some additional illustrations.

1865. "Remarks Concerning Certain Photographs Supposed to be of Early Date." 55 pp. Second edition, published same year, has 74 pages.

All these pamphlets were "privately printed" by Bradbury & Evans for the author.

J. BOWYER. 1853. "Brief Directions for Producing Photographic Pictures by the Collodion Process." Baker, Holborn, London.

The Rev. EDWARD BRADLEY will be more easily recognized under his *nom de plume* of "Cuthbert Bede," whose account of "Verdant Green" and his adventures at Oxford has long been a favorite book.

1855. "Photographic Pleasures Popularly Portrayed with Pen and Pencil." 8vo. 83 pp. 24 plates. Thomas McLean, Haymarket; and Hotten, Piccadilly. 4s. Second edition, 1859.

New and cheap edition, 1863. 52 pages. 24 plates. Day. 1s.

This is the one "funny book" of English photographic literature. The pleasant spirit in which it is written may be gathered from the dedication: "To all the light-hearted friends of light-painting, these pages of light literature are, with no light regard, dedicated!" As a contemporary critic remarked in the *Athenæum*, "The ludicrous side of photography is fair game for the caricaturist. With much cleverness Mr. Bede has seized the salient points of the new art." The author was hardly less clever with the pencil than with the pen, and several of the cuts had appeared in *Punch* before embellishing this amusing little volume. In the cheap shilling edition the cuts were reproduced by "automatic lithography" (whatever that may be) and are but shadows of their former selves. A reprint of the original would, we know, be welcomed by many.

W. T. BRANDE and A. S. TAYLOR. 1863. "Chemistry." 12mo. 892 pp. ("Photography and its Applications," pp. 595-610.) I. W. Davies, Princes street. 12s. 6d.

SIR DAVID BREWSTER was born at Jedburgh, in Scotland, in 1781, and died in 1868 at the patriarchal age of 87. In 1816 he invented the kaleidoscope. Brewster's connection with photography began in 1836, when he stayed at Lacock Abbey (the seat of Fox-Talbot) during the meeting of the British Association at Bristol. Talbot's method was then in a very incomplete state (it was not published till 1839), but the results already obtained excited a deep interest in



Brewster's mind. From that time he took an interest in photography, and although he made no striking discoveries, yet he did much to popularize the art. In 1865 Brewster was awarded a medal by the Photographic Society of France. The stereoscope—an instrument inseparably connected with photography—was much improved by Brewster, who substituted lenses for the reflecting mirrors of the original inventor, Professor Wheatstone.

1856. "The Stereoscope: its History, Theory, and Construction." 8vo. 235 pp. Jno. Murray, Albemarle street. 5s. 6d.

1859. *Encyclopædia Britannica*. Article on Photography, vol. xvii, pp. 544–555. 4to. A. & C. Black, Edinburgh. 21s. per volume.

HENRY, LORD BROUGHAM, a famous lawyer, politician, and man of science, was born at Edinburgh in 1778, and died at Cannes in 1868. As it has been lately claimed for Lord Brougham, on excellent authority, that he was an inventor—if not *the* inventor—of photography, it is well to see on what evidence the question rests. All that is known on the subject is a statement in the following book.

1871. "The Life and Times of Henry, Lord Brougham," written by himself. Three vols. 8vo. N. Blackwood & Sons, Edinburgh. 16s. per volume.

The statement with reference to photography is contained in vol. i, p. 69. "I was also (in 1794–95), diligently employed in experiments upon light and colors, and conceived that I had made some additions to the Newtonian doctrine, which I sent to the Royal Society in 1795. The paper was very courteously received, but Sir Charles Blagden (the Secretary) desired parts to be left out in the notes or queries as belonging rather to the arts than the sciences. This was very unfortunate, because, having observed the effect of a small hole in the window-shutter of a darkened room, when a view is formed on white paper of the external objects, I had suggested that if that view is formed, not on paper, but on ivory rubbed with nitrate of silver, the picture would become permanent, and I had suggested improvements in drawing founded upon this fact. Now this is the origin of photography, and had the note containing the suggestion in 1795 appeared, in all probability it would have set others on the examination of the subject, and given us photography half a century earlier than we have had it."

We regret that—on his own showing—it is not possible to award much credit to Lord Brougham for his "suggestion." For (a) it is certain that the ivory treated in the way proposed would not have been sufficiently sensitive to light to show any image; (b) the image (if produced) would *not* have been permanent, and Brougham seems ignorant of the necessity for a fixing agent; (c) at the time stated (1795), Wedgewood had actually obtained copies of objects by using nitrate of silver on paper, yet both he and Sir Humphrey Davy were forced to abandon the method, owing to its want of permanence.

C. BURNETT. 1857; "Photography in Colors: a Fragment." Edmonston & Douglas, Edinburgh.

F. T. BURROWS & J. D. COLTON. (Successors to Southwell Brothers, Photographers Royal, 22 Baker street.) 1876. "Concise Instructions in the Art of Retouching." With lithographic illustrations and negatives, which may be detached and printed from as examples. 8vo. pp. viii. and 65. Four plates: three wood-cuts, one negative. Marion & Co., 22 Soho square. 5s. Second edition, 1878.

The chief feature of this book is a "double pellicular negative," showing the same face before and after retouching.

W. K. BURTON. 1882. "The A B C of Modern Photography, comprising Practical Instruction in Working Gelatine Dry Plates." (Reprinted from *Photographic News*.) 12mo. pp. 84. Price, 6d.

Second and third editions, 1883 (third edition enlarged, 124 pp.)

Fourth edition, 1884. 12mo. 124 pp. Illustrated. 1s.

(Fifth edition, see Burton's "Modern Photography.") Piper & Carter, 5 Castle street, Holborn. 1s.

1885. "Modern Photography: comprising Practical Instructions in Working Gelatine Dry Plates, Printing, etc." 12mo. 130 pp. Illustrated. Piper & Carter. 1s.

The London Stereoscopic Company were the owners of a book first published in 1858 as the "A B C of Photography," and as Mr. Burton had selected his title in ignorance of their prior claim, it became necessary for him to modify it as above. "Burton's Modern Photography" is an excellent text-book; it is suitable for the beginner, and useful to the advanced student.

1885. "Pocket-Book for Photographers: Including the Usual Space for Notes, etc., with Tables for Facilitating Exposures." Piper & Carter. Paper covers, 9d.; and cloth, 1s.

Burton's "Tables for Estimating Exposures" are very useful, and have been largely copied.

Mr. Burton is, we believe, connected with a sanitary engineering company in London; he also teaches photography; and is, emphatically, a "useful man," ever ready to do good practical work.

(*To be continued.*)

### OUR PICTURE GALLERY.

SOME time ago, Mr. G. M. Greene, of Pennsylvania, sent us an 8 x 10 print which is quite interesting from the manner in which the negative was taken. Mr. Greene writes us that he exposed the plate in his camera without a lens, using a piece of tintype plate with a fine hole in it made with a needle point, the time of exposure being eighty seconds. The picture is much better than we should have expected with the method used, being only a little blurred, as if out of focus.

Humphrey B. Kendrick sends us a number of charming views at Santa Barbara, in California. The "Old Mission Corridor" is a wonderfully good study in perspective, a capital picture in every way. Another view of the Old Mission, showing the bells upon a primitive wooden framing, is also a fine photograph. The monks at work in the mission garden is also an interesting picture; while the general view of the Old Mission gives an excellent idea of these relics of Spanish religious work in California. In addition to being interesting pictures, they are all most excellent photographs.

J. A. Palmer, of Aiken, N. C., sends us a number of stereoscopic views of the effects of the earthquake. These are interesting as showing the severity of the earth movements. As photographs, many of them are good, but quite a number are made from over-exposed negatives with too rapid development.

J. S. Masseck, Grand Rapids, Mich., contributes several examples of his special work in photographing furniture. We must confess that the results he has

obtained in this direction are particularly fine, and deserve the highest commendation. The perfect rendering of the fine carved work is very beautiful.

G. M. Elton, of Palmyra, N. Y., has given us a set of his handsome studies, one of which appeared as an illustration in a recent number of the *BULLETIN*. We are sure that many of our readers will find this set of pictures a most interesting study.

Tauch & Pannewitz, of Texas, contribute a number of cabinets, mostly of children. This is a decided improvement upon some of the work of the same artists we saw some months ago, yet the pictures are still a little hard, and the high lights are too bright.

L. Ròbira, of New Orleans, sends us a number of fine cabinets, which are good examples of careful lighting, artistic posing, and some of the best printing we have seen. The pictures of children are very good.

W. McComb, of Michigan, has favored us with a number of cabinets, which are excellent examples of the use of the dark background. The little girls in Normandy caps are exceedingly pretty pictures, as also are the portraits of the ladies. The details in the drapery and lace-work is well brought out, and the lighting of the faces is very good.

C. W. Platt, of Ohio, sends us a couple of cabinet pictures of children that are excellent pieces of photographic work in every way, but more especially in the lighting and posing. The expression on the faces is very happily caught.

The Phenix Plate Company have sent us a number of examples of work done on their argentic dry plates. These are certainly very good, and if they will only give sufficiently clear directions, that others may obtain the same results, these plates may find many who will use them.

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#### OUR ILLUSTRATION.

Our illustration represents a pair of damsels enjoying the delights of tobogganing, an early Canadian sport, and one which not only seems to hold its own with the originators, but is spreading, until it is probable that, ere long, the chief attraction to a place will be its toboggan slide. In colder climates than our New York (shall we say) enjoys, nature does what art supplies to us. In the long cold winters of the North the snow lies for weeks, yes, months, and the gradual thawing and freezing of its surface produces a layer of ice that will not only hold considerable weight, but has admitted of tobogganing and skating over the tops of high rail fences. The writer will never forget such winters, when he has been equipped with skates and sled, using the former to convey him to the top of some hill that would allow him to sled for a very long distance.

The popularity of the sport illustrated has created a want in the minds of the public to be photographed, showing both costume and position. To do this in comfort and comparative ease has been made a study, and we feel confident that the aim has been accomplished.

One would hardly imagine that our picture was made in a gallery in our metropolis, but such is a fact. The background, foreground, etc., represent nature so closely as to deceive the uninitiated.

In competition, a famous painter produced on his canvas the representation of fruit so like the natural, that the birds came and pecked at it. A brother artist painted a counterfeit of a curtain so naturally, that his friend, on seeing it,



said, "Draw aside the curtain, and let me see your work;" and when he found that he had mistaken the painting for the genuine article, exclaimed "Thou hast won. I only deceived birds, thou an artist."

The purpose of the scenic artist is to deceive the public, and who is there among us who can say that such deception displeases. It is a point in our armor where we are vulnerable, and the better we are deceived, the more we admire the means practiced. Our picture is a capital illustration of the true art that can be practiced by a photographer; and Mr. Korthueuer is to be congratulated upon his success. There are few pictures that exhibit so much really artistic feeling as the charming specimen of photographic skill that we present to our readers with this issue of our journal. The more we study it the greater is the delight we receive in the admiration of its beauty.

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PORTRAITURE IN ORDINARY ROOMS.—I have taken most of my portraits in an ordinary room, the exact dimensions of which I need not trouble you with here; suffice it to say that it is about three times as long as it is broad, and with two windows on one side; but I think my hints would be just as applicable to most ordinary dwelling rooms. I place the sitter exactly in line with the window, adjusting the camera opposite him, with the window at the side; then, if wishing to take a Rembrandt, simply soften the shaded side by means of a white screen or a small looking-glass, which, of course, is placed on the side opposite to that occupied by the window. But if an ordinary lighted portrait is required, burn in front of the screen or mirror a little magnesium wire, which generally results in a well-balanced light and shade effect. This last idea (magnesium + daylight) is, I think, original, and, if given a fair trial, will give very good results. One last remark: Let the sitter know you are going to use the magnesium.—By F. KNOTT LEE, in *Photographic News*.

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PERILS OF AMATEUR PHOTOGRAPHY.—I am afraid this amateur photographing craze will have to be stopped. I met a man the other day, and the conversation, by his dexterous management, turned to the subject.

"Do you know ——?" he asked, naming one of the amateur photographers.

"I do, very well."

"I wish you'd go up and see him."

"What for?"

"Well, he was over at Saucelito the other day and I saw him taking a picture of a very pretty bit of view. I want to get it."

"Yes?"

"Yes," he went on as a fellow always does, and gave himself away. "I was over there with a friend, and ——," he hesitated.

"Was she very pretty?"

"I knew I'd make a mess of it. I say, don't put it in the paper. The fact is that I took Miss ——, you know we are to be married very soon? We were walking very happily. I won't deny it, we were tenderly inclined. ——these photographers. You can't go anywhere but you find a lens on you. Well, we were walking along, when I happened to turn and there was a cursed photographer and he'd just taken a picture. I want you to go up and see him and find out if—well—if—there's anything in that plate except the landscape."—*San Francisco Chronicle*.

# ANTHONY'S Photographic Bulletin.

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Prof. C. F. CHANDLER, Ph.D., LL.D.,  
Aided by ARTHUR H. ELLIOTT, Ph.D., F.C.S.,  
and a corps of practical assistants.

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*E. & H. T. ANTHONY & CO., Publishers.*

## PHILADELPHIA AMATEUR PHOTOGRAPHIC CLUB.

THE regular monthly meeting of the Club was held at their rooms on the evening of November 15th.

*President* PUSEY in the chair. In the absence of Secretary Randall, Mr. Chase was appointed Secretary *pro tem*. The reading of the minutes of the previous meeting was omitted.

Mr. STUART reported for the Executive Committee the completion of the alterations to the dark room, and called attention to the new rules for governing the use of the same. He also reported the election to active membership of Messrs. C. F. Graff and E. Bromfield.

Mr. GILLINGHAM reported for the Committee on Incorporation, that owing to the illness of one of the members and the absence from town of another, the Committee had been unable to perform the duties devolving upon it, and moved that the Committee be dismissed. Upon motion the President appointed a new Committee, consisting of Messrs. Cunningham, Haines, and Clements.

Mr. HAINES read some correspondence with the Minneapolis Amateur Photographic Club in regard to our exhibition, and presented a bill for transportation, which was ordered to be paid. Mr. Haines then suggested that members contribute some pictures for exhibition purposes in order to have them ready for use in such cases.

Mr. STUART stated that the Executive Committee had been looking for new quarters for the Club, and that they had been offered rooms on West Penn square. He invited discussion on the subject among the members.

Mr. HAINES said that we were held by our lease on the present premises until the 1st of March. Messrs. Super, Chase, and Clements spoke of having visited the proposed rooms and of their desirability.

Mr. HOPKINS moved that the Executive Committee be ordered to confer with the landlords of both premises and ascertain what arrangements can be made with them.

Mr. GILLINGHAM moved to amend by ordering a vote be taken by the roll call in order to obtain the individual opinion of the members upon the subject. Amendment accepted, and thus amended the motion was carried.

The Executive Committee presented a bill for apparatus purchased for the dark room. Ordered to be paid.

The acting Secretary read letters of resignation from Messrs. W. D. H. Wilson and L. K. Passmore, which were accepted.

A vote of thanks was tendered to Buchanan, Smedley & Bromley for their gift to the Club Library, entitled "The Magic Lantern."

The Club then proceeded to nominate officers for the coming year, with the following result:

*President* ..... WILLIAM A. HAINES.  
*First Vice-President* .... H. P. GILLINGHAM.  
*Second Vice-President* .... PHILIP B. CHASE.  
*Secretary* ..... ALFRED THOMPSON.  
*Treasurer* ..... F. G. STUART.  
*Executive Committee*.—F. G. STUART, WILLIAM SUPER, W. W. RANDALL, A. CLEMENTS, P. B. CHASE, H. G. PHILLIPS.

*Excursion Committee*.—F. G. STUART, A. THOMPSON, ALFRED CLEMENTS.

Upon motion the club adjourned to witness an exhibition of lantern slides, made from negatives taken by Mr. Pusey during his recent trip to Europe.

The views were all taken with a detective camera, and were remarkable for their general excellence and the detail shown in the shadows.

PHILLIP B. CHASE, *Secretary pro tem*.

# THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.

SPECIAL MEETING, OCTOBER 27, 1886.

(Continued.)

## RULES FOR JOINT EXHIBITIONS.

8. ALL pictures must be sent at owner's risk, prepaid, and delivered to the Committee of Arrangements at the place by them indicated, and return charges collected by carrier.

9. The Committee will not be responsible for any loss or damage that may occur to exhibits while in its charge, but will use all reasonable care to prevent such occurrence; and at the close of the exhibition will repack each exhibit and ship as directed by the exhibitor.

10. Advertising in any form in connection with an exhibit is strictly prohibited.

11. No pictures which have taken prizes elsewhere shall be so designated until after the awards have been announced.

12. A charge shall be made for wall space at the rate of 25 cents per square foot, the minimum charge being \$1 (one dollar), to all except members of the three societies and foreign exhibitors.

The amount of charges for wall space must be inclosed with entry form to the Committee of Arrangements.

If any of the pictures entered are not hung, a due proportion of the charges will be returned.

A commission of ten per cent. on all sales will be retained.

13. Arrangements will be made for the proper exhibition of lantern slides on the screen.

14. The Committee of Arrangements, acting for the local society, shall receive all income and make all payments for expenses of the exhibition; the said Committee being required to turn over to the local society within a reasonable time after the close of the exhibition, properly authenticated vouchers for all expenditures, together with a statement of receipts, and the balance on hand, if any.

The *President*—I will state, in connection with these rules, that the Council decided that it would not be necessary to refer the rules to the society, but inasmuch as we appointed this Joint Exhibition Committee to confer with the other societies, I think it would be perfectly proper for some action to be taken, and I suggest that a motion be made that the rules, as agreed upon, be accepted by the society.

Mr. CHAMPNEY—I move the acceptance of these rules.

Motion seconded and carried.

The *President*—Mr. Robert S. Redfield, the Secretary of the Philadelphia Society, has presented to us two very handsome photographs, being copies of the Presentation Prints given members of his society in 1886.

The next matter of interest which we have this evening is the exhibition of the heart photographing apparatus of Dr. W. G. Thompson, who will explain its operation and illustrate by photographs what he has accomplished in this direction.

For Dr. Thompson's remarks, see page 692.

The *President*—Where do you focus from?

Dr. THOMPSON—I proceed by laying a piece of ground glass here [indicating] before the plate has been put in position, and by pulling the object up with this little mechanism [indicating] attached to the stand. I have an arrangement for moving the whole camera, and also an arrangement for moving the object.

The *President*—This ground glass which you lay on; is it in the same plane as the sensitive plate?

Dr. THOMPSON—Yes, sir.

Mr. FISK—Have you any stop there to prevent the plate from being exposed twice; you can turn it rapidly, but can you stop it?

Dr. THOMPSON—I haven't any stop for that, but you will see that as the pawl slips in the cog it meets with resistance, and with a very little practice you can turn it and stop at any given point. You feel the resistance through the crank, so that you are not apt to run over the limit.

I made a few mistakes at first, but after practicing I did not make any. It is possible to take one picture by turning it so far [illustrating] and then stop and make any changes that you want to in the condition of the object, or apply some drug. I have in these pictures that you see used a great many different drugs, and they show very distinctly the altered shape of the heart in its different stages of contraction.

Mr. FISK—How is the drug applied?

Dr. THOMPSON—By giving hypodermic injections, or by its being painted on the heart surface. Nitro-glycerine is one of the strongest stimulants of the heart. It is used in medicine and causes a very violent contraction.

Mr. CHAMPNEY—Mr. President, I move that a vote of thanks be tendered to the doctor for his very able exposition of a most ingenious contrivance for photography.

Motion seconded and carried.

The *President*—The next matter of interest



this evening will be a paper which Mr. W. H. Rau, of Philadelphia, will read on American films and the separation of gelatine films from paper, accompanied with practical demonstrations.

Mr. W. H. Rau then read his paper [See page 657].

A recess was then taken and Mr. Rau proceeded to make some practical experiments. He had brought with him several sheets of glass, all of which had been previously coated with the rubber solution, three or four having squeegeed on them (4 x 5) paper negatives, the backs being surface dry. This he found at this season of the year was the right condition for stripping, but late in August his experience required that the paper should be extremely dry.

Upon the table before him were placed four trays. In the first was boiling water; in the others were tepid and cold water. Taking a plate having a paper negative attached, he quickly slid it into the boiling water.

In three-quarters of a minute the paper loosened and was easily raised at one corner by a pen-knife blade and pulled off the plate. The latter was then removed to a tepid bath for a few minutes until the surplus of soft gelatine was washed off.

In this condition a transparent film, showing a perfect, but reversed, negative on glass was seen, and was capable of being reduced or intensified at will, should such be necessary. Mr. Rau remarked that it had been advised to strengthen this film before removing it from the glass, by coating it with a varnish of gelatine, but he had found that to be a very disagreeable method, and advocated and used instead a specially prepared gelatine sheet, which was made by the Eastman Company. The film adhering to the glass plate was laid in a tray of cold water, and the gelatine sheet, soaked a minute or two in water until it became somewhat limp, was held between the thumb and forefinger of each hand and slipped edgewise, with a quick motion, under the surface of the water, then floated directly over the plate; when in the right position, the plate was raised or lifted gradually, causing the gelatine film to settle on its surface. After removal from the water a rubber squeegee is applied to insure perfect contact between the picture film and the gelatine. Unless great care is taken, bubbles and blisters will form between the two films.

The plate is then set aside to dry, after which the film negative is stripped from the glass by cutting around the edge with a knife.

Mr. Rau had with him a number of excellent negatives made in Paris by this method, which were examined with much interest. The demonstration proved to be very interesting and successful, and the ease, rapidity and dexterity with which the films were managed, surprised many who had looked upon the process as being too tedious to undertake. One member inquired whether the films did not curl up when dry, but Mr. Rau replied that they did not, and that there was no advantage obtained in passing them through a solution of glycerine and water.

A cordial vote of thanks was then unanimously accorded to Mr. Rau for his interesting paper and instructive demonstration.

After the recess, the President called the meeting to order, and stated that had there been more time the Question Box Committee intended to elucidate certain principles relating to the art composition of landscape pictures. But the matter would be taken up at some future meeting.

Mr. CHAMPNEY—This paper [showing it], published in Paris, containing these illustrations, I thought would be interesting to all of you, and I have consequently brought it here this evening. It was sent me some months ago, and it may not be as new to you as it was to me when it came. These are reproductions from photographs of the interview with Chevreul, who is just one hundred years old. You all must have read some notice of the celebration of his one hundredth birthday. Paul Nadar, the celebrated photographer, was sent to Angers by *Le Journal Illustré*, and, whilst Mons. Chevreul chatted on various subjects, took instantaneous pictures, and here you have not only the sentiment that he is expressing given elaborately in the text, but the exact facial action at the moment he spoke. I think you will find the pictures interesting.

[The periodical was then passed around.]

Chevreul was Director of the Gobelins tapestry works for a great many years, and was deposed only a few years ago, when he was over ninety. I read in the paper the other day that the success of his celebration was so great, that they were now going to try to find one hundred people in France who had reached the age of one hundred years, gather them together, and give them a rousing festivity.

The President then made an announcement in regard to the special boat chartered for witnessing the unveiling of the statue of Liberty, after which the meeting adjourned at about ten P.M.

REGULAR MEETING, NOVEMBER 9TH, 1886.

THE meeting, held at 122 West 36th Street, was called to order a few minutes after 8. *President* BEACH in the chair.

The *President* gave a *resume* of the minutes of the last meeting, which was adopted. He then announced that Dr. J. W. Roosevelt would exhibit, on December 14th, his improved apparatus for taking photo-micrographs, and further stated that the first joint photographic exhibition would probably be held in March at the American Art Galleries, or some other suitable place. An invitation had come from the Hartford Camera Club soliciting pictures from members of this society for their second annual exhibition to be held the latter part of November.

On the 18th of November an entertainment was to occur at Association Hall, to include instrumental music by the Brooklyn Harmonic Club, humorous recitations by James S. Burdett, and a stereopticon exhibition of choice pictures made by amateurs. Members were invited to make special efforts to sell tickets.

The *Librarian* reported the following additions of photographs and books to the library since the meeting of October 12th, as follows: Two 4 x 5 bromide prints of the unveiling of the Bartholdi statue on October 28th, by Mr. R. H. Lawrence; a print of Niepce by Mr. Joseph S. Rich; three 3¼ x 4¼ views by Mr. Roosevelt of the Bartholdi statue unveiling; seven 3½ x 5 prints of the same subject; also eight 3¼ x 4½ prints of the September 7th yacht race; and eight miscellaneous lantern slides by Mr. Alvey A. Ade, of Washington, D. C. One oil painting, "A prize copy of Cleopatra in the Dresden Gallery," presented by Dr. John H. Janeway. A book entitled "The Ferrotypes and How to Make It," by Estabrooke, first edition, presented by Mr. Joseph S. Rich.

The *President* then stated that Dr H. G. Piffard had presented the society with an improved Anthony enlarging easel, and Mr. Joseph S. Rich the small black walnut secretary desk now in the club room. Donations in cash to the total amount of twelve dollars had been received from Messrs. L. H. Laudy and F. H. Carter.

Respecting the success of the recent excursion the *President* said:

The excursion for photographing the unveiling of the Bartholdi Statue of Liberty, although it occurred on a very disagreeable and unpleasant day—especially for photographing—was altogether quite a success. The net

receipts over the expenses amounted to \$75. (Applause.) I have no doubt there were a great many disappointed on that occasion, as I was myself, by the failure to witness the fireworks at night, but at the same time the society, as a whole, is not disappointed.

In the absence of Mr. Granger, Mr. Champney has kindly consented to act as Secretary *pro tem* this evening, and here is a communication which he will read from the secretary of a new club which has been recently formed in Montreal, Canada.

*Secretary pro tem.*, reading.

MONTREAL, November 8, 1886.

F. C. BEACH, Esq.,

*President New York Society of Amateur Photographers.*

DEAR SIR,—The first meeting of the Montreal Amateur Photographic Club was held on Friday evening last, at their quarters, 12 McGill College avenue. The officers elected were: Chairman, Harry J. Dean; Secretary and Treasurer, J. W. Davis. The meeting was composed of the most enthusiastic amateurs of this city, who supported the project most liberally. It was decided to make known the existence of the club, and to offer the use of the dark room to any visitors requiring it who may attend this winter's carnival. The club will take it as a favor if you would kindly notify your members of our existence, and that we shall not be at all pleased if any one should come to our city and omit to look us up.

Yours truly,

J. W. DAVIS.

A vote of thanks was then tendered to Mr. J. W. Davis, the writer of the letter, for his kind invitation.

*President* BEACH—There has been a project on foot to get up a special photographic album embracing pictures of all the different members of the society, and I appointed on this committee Mr. Granger, the Secretary; Mr. Baker, and Mr. Rich; they have prepared a communication which, it is expected, will be mailed to the different members of the society. In order that they may know it in advance, the Secretary will read the form of the circular.

[Society Album Letter.]

*Secretary pro tem.*, reading:

NEW YORK, November 16, 1886.

DEAR SIR,—By and with the advice of the Board of Directors, Messrs. John T. Granger, Robert Baker, and Joseph S. Rich have been appointed a Special Committee on a Society

Portrait Album, designed to contain the photograph of every member of the society, with his autograph.

The matter has been under consideration for some time, and is eminently proper, since a photographic society should be able to show photographs of its own members. In addition, it will be a means of making members better acquainted with each other, thereby promoting a greater social feeling. It is intended that the expense of getting up the album shall be borne proportionately among the members. A small sum from each member will furnish a handsome and substantial volume. You are therefore earnestly requested to furnish your photograph, cabinet size, accompanied by your autograph, written on the inclosed card. It is proposed to place these photographs in handsomely bound volumes, to be deposited in the rooms of the society, where they will be properly preserved and transmitted to our successors. You will find an addressed stamped envelope inclosed, in which, unsealed, you can forward the photograph.

Arrangements have been made with Mr. George G. Rockwood to take superior photographs of such members as desire them, at reduced rates. J. T. GRANGER,

*Chairman of Committee,*  
No. 1 Broadway.

*President* BEACH—The Secretary will now read the names of associate members who have just been elected by the Board.

*The Secretary pro tem.*—The associate members who have been elected are R. L. Major, F. R. Masters, and F. T. Luqueer; and Mr. E. M. Bicknell has been elected a corresponding member.

The *President* then announced the resignation of Mr. Irwin A. Sprague, an active member, stating that it had been accepted.

At the *President's* request, Dr. Janeway took the chair.

Mr. BEACH—A short time ago I requested Professor Spencer B. Newbury, of Cornell University, New York, to furnish the society with a few facts regarding a subject which we are all very familiar with, but yet know so little about, and that is pyrogallol or pyrogallic acid. The paper which he sends is brief and interesting. [See page 681.]

Mr. BEACH then read Professor Newbury's paper.

*The President pro tem.*—Gentlemen, you have heard this very interesting paper. What is your pleasure?

Mr. ROOSEVELT—I move that it be placed

on the minutes, and that a vote of thanks be tendered to the writer.

Mr. BEACH—I second that motion.

The motion was then put and carried unanimously.

*The President pro tem.*—I believe the next thing on the programme is that we are to hear from Mr. Champney.

Mr. CHAMPNEY—I think, Mr. President, that the next thing is an explanation of the lantern, and that when the lantern is used I am to make some little comment on the pictures that are thrown on the screen.

Mr. BEACH—Yes, I believe that was the order of the programme. The lantern which Mr. Tisdell has brought here for exhibition is constructed about as follows (placing it on the table). In the first place it has an extensible front for regulating the focus, and you will notice that the objective tube is elevated quite a little ways from the base, and that is designed especially to accommodate the carrier, and there is a very peculiar eclipsing arrangement inside which operates in unison with the carrier. I will just show the operation. [Illustrating]. There is a little shaft here [indicating], extending from below and behind the condenser along the bottom of the lantern to the rear, terminating in a crank, which projects outside the back of the lantern. The shaft rotates in the space of a half circle. When you start to revolve it, it lifts the eclipse disk in front of the back face of the condenser between it and the light; further rotation raises the lower carrier up in front of the condenser, thus changing the picture; at the completion of the half-circle rotation the eclipse disk drops and a new picture is thrown on the screen. When the crank is rotated back in the opposite direction, the eclipse disk cuts off the light first, then the upper carrier falls in front of the condenser, and a new picture appears. The advantage of the apparatus is that you don't see any change of the picture at all; in other words, it operates somewhat similar to the society's lantern.

You see the movement is very rapid and very simple. There is also a special arrangement for holding the lamp and alcohol; it is also adapted either for burning alcohol or gas. I may say that the lantern is designed for use in country places where persons cannot get any kind of gas, and the idea is that the gas is manufactured as you use the light. The oxygen generating chemicals are inclosed in a long tin cylinder, which you heat by means of an alcohol lamp and that forces the oxygen into a small reservoir, and from there



it comes up into the jet and impinges against the lime; the alcohol lamp in the lantern heats the lime and takes the place of the ordinary street or hydrogen gas which we use in the regular lantern. Those are the novel points about it, namely, its portability, simplicity, and the fact that you can so easily and quickly change from one picture to another.

Mr. CHAMPNEY—Is the apparatus expensive?

Mr. BEACH—I don't know what the expense is.

Mr. CHAMPNEY—Is it a lantern that is to be put on the market?

Mr. BEACH—Yes sir. Now we will set the lantern up and after we finish I will show those persons who desire, both the oxygen tube and the other parts. I will state that the pictures we are going to show by the means of this lantern are for two purposes. *First*, to show how nicely the lantern works, and *secondly*, because Mr. Champney has kindly consented to criticise some points in pictorial or landscape pictures, as they appear on the screen.

While we are setting the apparatus up, Mr. Champney will make a few preliminary remarks. [See next BULLETIN.]

[The lights were then lowered and Mr. Tisdell set up his lantern in working order, then twenty or more lantern slides were projected on the screen, each one being criticised by Mr. Champney. He introduced a novel method of showing how the pictures could be improved by sliding card-board mats of different shapes and sizes in front of the lantern slide.

His opinions relative to the better looks of the pictures were generally assented to, and the main fact, that a more effective and artistic result is produced by cutting off portions of the sky and foreground was particular emphasized in several specimen pictures. Altogether, the exhibition proved to be very instructive and entertaining. Sketches of the pictures, with Mr. Champney's comments, will appear in a later issue.]

(To be continued.)

## U. S. Patents.

- No. 333,465. Multiple Photographic Sheet. Orion L. Hurlbert, St. Louis, Mo. Filed June 29, 1885. Issued December 29, 1885.
- No. 333,470. Method of Preparing Surfaces for Printing by Photography. Edward Kemler, St. Gall, and Jaques Brunner, Kussnacht, Zurich, Switzerland. Filed July 10, 1884. Issued December, 29, 1885.
- No. 335,002. Apparatus for Washing Photographic Negatives. William H. H. Whitney, Chelsea, Mass. Filed June 8, 1885. Issued January 26, 1886.
- No. 335,518. Shutter for Photographic Cameras. Samuel W. Geery, Newark; F. W. Jackson, and C. B. Day, East Orange, N. J. Filed September 5, 1885. Issued February 2, 1886.
- No. 335,893. Process of Carbon Photography for Coloring Impressions. Louis J. H. Cellérier, Paris, France. Filed May 9, 1885. Issued February 9, 1886.
- No. 336,356. Timing Attachment for Photographic Cameras. Charles W. Stiff, Foxborough, Mass. Filed February 7, 1885. Issued February 16, 1886.
- No. 336,815. Stand for Photographic Cameras. William H. Lewis and Erastus B. Barker, New York. Filed August 19, 1885. Issued February 23, 1886.
- No. 337,876. Adjustable Attachment for Camera Stands, School Desks, etc. Frank Shepherd, Freelandville, Ind. Filed May 16, 1885. Issued March 16, 1886.
- No. 337,904. Revolving Photographic Background and Foreground. Isaac A. Wetherby, Iowa City, Iowa. Filed June 18, 1883. Issued March 16, 1886.
- No. 337,963. Case for Photographic Sensitized Paper. William H. Lewis, and Erastus B. Barker, New York, N. Y. Filed August 19, 1885. Issued March 16, 1886.
- No. 338,651. Mount for Pictures and Photographs. Richard H. L. Tallcott and Elizabeth Tallcott, Boston, Mass. Filed July 18, 1885. Issued March 23, 1886.
- No. 338,782. Camera Shutter. Alfred E. Rhinehart, Denver, Colorado. Filed April 20, 1885. Issued March 30, 1886.
- No. 339,423. Process of Photo-Engraving. Charles T. Iago, Highbury, Middlesex, England. Filed March 11, 1885. Issued April 6, 1886.
- No. 339,731. Attachment for Cameras. Solomon S. Benster, Toledo, Ohio. Filed June 4, 1885. Issued April 13, 1886.
- No. 339,736. Camera. Caius C. Bragg, Avondale, Ohio. Filed July 2, 1885. Issued April 13, 1886.
- No. 339,840. Shutter for Photographic Apparatus. John C. Beach, New Haven, Conn. Filed October 19, 1885. Issued April 13, 1886.
- No. 339,898. Photographer's Wash Box. Thomas H. Kelley, Cincinnati, Ohio. Filed September 11, 1885. Issued April 13, 1886.
- No. 339,910. Photographic Shutter. Charles F. Marvin, Washington, D. C. Filed February 23, 1886. Issued April 13, 1886.
- No. 340,213. Photographic Shutter. John A. Hoedemaker and G. W. O'Hara, Kalama-

- zoo, Mich. Filed August 10, 1885. Issued April 20, 1886.
- No. 340,987. Photographic printing-frame stand. Wesley M. De Voe, Springfield, Mass. Filed July 9, 1885. Issued May 4, 1886.
- No. 341,024. Picture-frame hanger. Milton Lester, Jr., Suffield, Conn. Filed January 15, 1886. Issued May 4, 1886.
- No. 341,083. Method of preparing paper for photographic printing. Redfield B. West, Guildford, Conn. Filed June 1, 1885. Issued May 4, 1886.
- No. 341,130. Photographic shutter. Alvan G. Clark, Cambridgeport, Mass. Filed December 12, 1885. Issued May 4, 1886.
- No. 341,633. Roller for photographic sensitive paper. Erastus B. Barker, New York. Filed November 21, 1885. Issued May 11, 1886.
- No. 341,885. Attachment for focusing photographic cameras. Fred. Collins, St. Joseph, Mich. Filed July 14, 1885. Issued May 18, 1886.
- No. 341,886. Photographic camera attachment. Fred. Collins, St. Joseph, Mich. Filed July 21, 1885. Issued May 18, 1886.
- No. 341,887. Instantaneous shutter for cameras. E. E. Collison, Jr., Erin, Tenn. Filed November 2, 1885. Issued May 18, 1886.
- No. 342,211. Photographic camera. W. H. Lewis & E. B. Barker, New York. Filed August 20, 1885. Issued May 18, 1886.
- No. 342,212. Photographic camera. W. H. Lewis, New York. Filed December 8, 1885. Issued May 18, 1886.
- No. 342,693. Photographic shutter. G. F. Green, Kalamazoo, Mich. Filed June 6, 1885. Issued May 25, 1886.
- No. 342,914. Plate holder for camera. Ludwig Koss, New York. Filed December 16, 1885. Issued June 1, 1886.

### What Our Friends Would Like to Know.

*N. B.—We cannot undertake to answer questions of a technical character except through the columns of the BULLETIN. Correspondents will please remember this.*

*Q.—G. H. L. writes: Please answer, through the columns of your valuable paper, the BULLETIN, where the magnesium light can be purchased; and, if not too much trouble, give a brief sketch of the mode of using the same.*

*A.—Magnesium ribbon is sold specially prepared for burning to give illumination, and we believe our publishers will supply you with it. The method of using it has been described in the columns of the BULLETIN in the German letters of Dr. H. W. Vogel, and consists in burning unequal quantities on each side of the sitter. For particulars, see page 548 of BULLETIN of September 25, 1886. One meter = 39.37 inches, and we note that there was burnt half a meter on the light side and  $\frac{1}{2}$  of a meter on the shadow side of the sitter; which is equal to  $19\frac{3}{4}$  and  $3\frac{1}{4}$  inches respectively.*

*Q.—READER writes: Will you kindly advise me, through your columns, of the best way to repair my camera bellows. The rubber cloth between the covered card-board strips forming the "joints" leaks light; not badly, but enough, I think, to fog a plate.*

*A.—Our advice is that our correspondent should get a new bellows. We have tried mending rubber cloth, but have never succeeded in making a good job of such work, and the time and trouble used in preparing the cement is very great. In fact we do not advise any one to try the experiment; it is much too troublesome and the result unsatisfactory.*

*Q.—F. R. writes to us, giving a long account of his troubles with thin negatives. He says that he used Edwards' alkaline developer and got thin negatives. He also complains that by using hypo solution, 1 in 8, he could not fix his plates properly in half an hour.*

*A.—In regard to thin negatives, the trouble is probably from over-exposure and too strong developer. We would advise our correspondent to get some photographic friend to show him how to develop a negative, for we find that many beginners using a weak developer do not develop long enough. It is not sufficient that the image appear upon the surface of the plate, it should be visible upon the back of the plate, at least in the darker portions, and only experience can give the operator a knowledge of when to stop developing. Mere fading of the image upon the surface is not a sufficient guide alone. In regard to the fixing bath, we think the hypo is too weak, and advise a strength of 1 in 6.*

*Q.—H. K. writes: What is the best and latest way for enameling photographs by the plain collodion process, or is there some better way? If so, please give it with formula and directions; if not, please give the old one, with particulars for working it.*

A.—There are quite a number of methods for enameling photographs, and the details are much too long for us to give them in these columns. We advise our correspondent to refer to "The Silver Sunbeam," published by the proprietors of the BULLETIN, where, on pages 407 to 412, all details are given.

Q.—J. M. H. writes: What is dechenite (or vanadate of lead and zinc), and its use? It was recommended to me for a toning bath. I cannot find a druggist that knows what it is, or that can find it in the chemical works that they have.

A.—Dechenite is a compound of vanadic acid with lead, and is a rare mineral. Its use as a toning agent is new to us, and we should think it would be very difficult to obtain it, at least in a condition so that it could be readily used for toning.

Q.—F. C. M. writes: Please answer the following in the BULLETIN. 1. In using Newton's standard developer, what is the limit of strength possible for any plate? 2. Can concentrated developers be used without dilution for under-exposed plates? 3. What is a good formula for an "orthochromatic developer?"

A.—For ordinary exposures the limit would be when the developer contains between three and four grains of pyro to the ounce, and the other ingredients of the developer in the same proportion as given in Newton's formula. But no hard and fast rule can be laid down, as some plates will stand as high as six grains of pyro to the ounce of developer. Concentrated developers can be used upon under-exposed plates; but it is best to begin with a normal developer and use the concentrated one after. The potash developer is generally used upon orthochromatic plates.

## Views Caught with the Drop Shutter.

I. H. STODDARD, of New Haven, Conn., has lately fitted up some handsome new quarters on Chapel street in that city. His photographic reputation has spread far and wide, and is undoubtedly due to his artistic taste and ability, as well as the use of first-class instruments.

*Outing*, the well-known journal of outdoor sports and pastimes, has recently fitted out an expedition that is to go around the world in a yawl. The feat is to be performed by Mr. F. A. Cloudman, of Newburyport, and he is going to take with him a photographic outfit furnished by our publishers.

OWING to the success of many workers in astronomical photography, the French Academy of Sciences proposes to hold an international conference in Paris next year, to elaborate ascheme to make a photographic map of the whole heavens, to be executed by ten or twelve observatories at the same time.

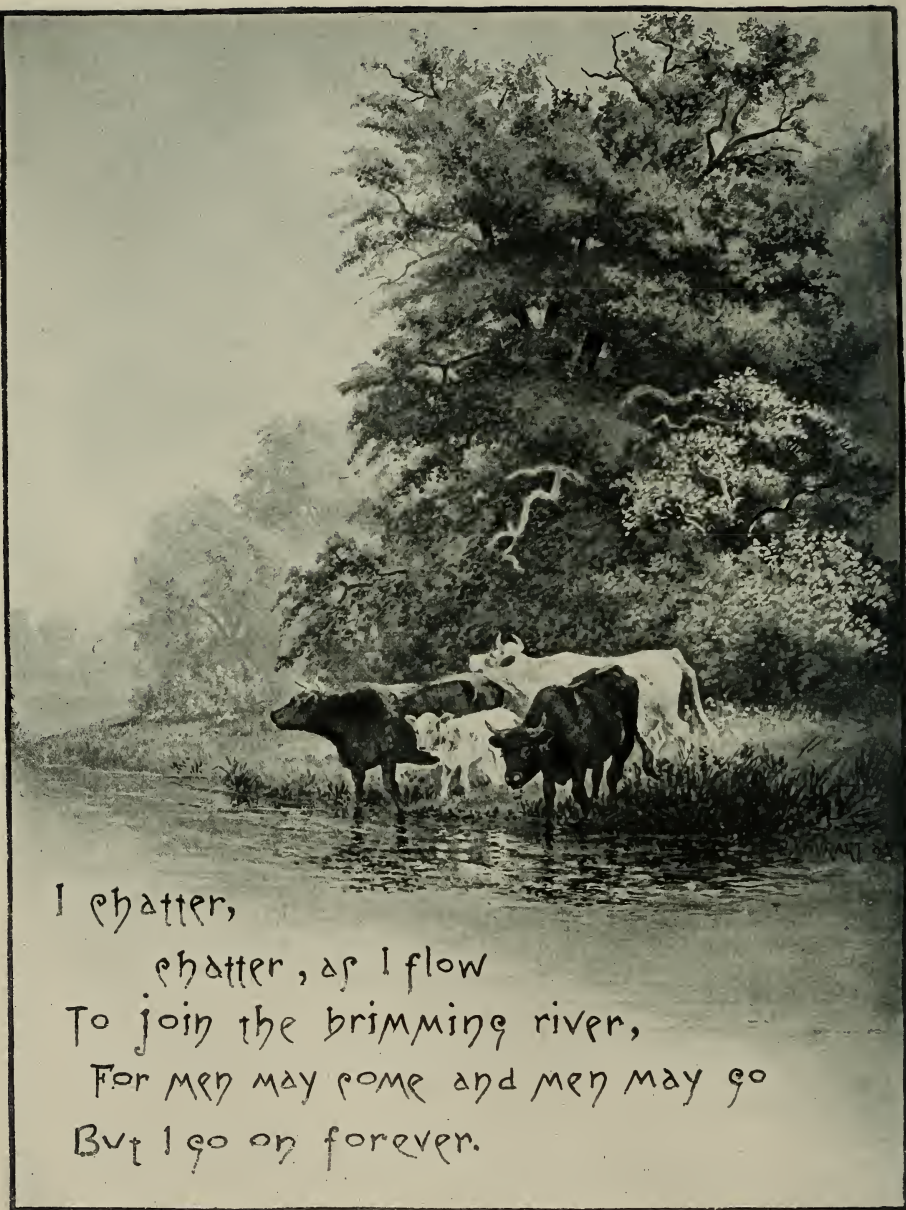
FIFTEEN of the amateur photographers of New Haven held a meeting in Attorney C. B. Matthewman's office in the Insurance building, and voted to form a permanent organization, the name of which is to be decided upon later. There are about one hundred amateur photographers in the city. Fifty of them had been notified of the meeting, and replies had been received from over forty. Committees were appointed as follows: Permanent Organization, C. B. Matthewman, Mr. Farrington, J. F. Malone; Quarters, W. H. Seward, F. Van Allen, J. H. Sherman. These committees are to report at a meeting to be held at an early date.

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I chatter,  
    chatter, as I flow  
To join the brimming river,  
    For men may come and men may go  
But I go on forever.

For copyright and Co. NY

PHOTO-GRAVURE FROM WASH-DRAWING,

From "THE SONG OF THE BROOK,"

Published by NIMS & KNIGHT, Troy, N. Y.

# ANTHONY'S Photographic Bulletin.

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Prof. CHARLES F. CHANDLER, Ph.D., LL.D., *Editor*.

ARTHUR H. ELLIOTT, Ph.D., F.C.S., *Associate Editor*.

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DECEMBER 25, 1886.

Vol. XVII.—No. 24.

## THE BULLETIN FOR 1887.

IN looking over the work accomplished by the BULLETIN during the past year, we cannot help feeling a sense of satisfaction and pride that the course we mapped out twelve months ago has met with approval at the hands of our subscribers. We promised our readers at that time that we would help them if they would reciprocate, and we have neither of us cause to complain. As the subscription list increased, we added new and attractive matter to the BULLETIN, both in the literary and artistic departments. The foreign correspondence is now superior to any other journal published in America and second to none in Europe. The illustrations are from the best workers in the ranks of both professional and amateur photographers, and the various cuts that are used to facilitate description in the papers that appear in these columns far outnumber those in any other photographic periodical in the United States. These illustrations are possible with us only because we have great facilities for their production, and usually would be out of the question in a journal that is sold for such a low price; ordinarily they alone would cost more than we get for the journal, literary matter and all. But we can give these examples of photographic art, and shall continue to do so, only improving as the art progresses and new hands lift it upward.

To give a list of the large number of our contributors is out of the question, but we invite our readers to look through the pages of the BULLETIN for the past twelve months and note the names of those who have served to interest and instruct them. No important active photographic worker will be found unrepresented.

The records of the proceedings of photographic societies have become noted for their accuracy and fullness, and although an expensive feature of the journal, we are proud to know that the work in this direction is fully appreciated. Our reward is the substantial list of subscribers that receive each issue of the BULLETIN, and those that are daily additions to this list.

The correspondence column still continues an important feature of the BULLETIN, and the increasing interest taken in it by our subscribers affords pleasure to the editors, and a satisfaction that their efforts to help the readers out of difficulties are fully appreciated. The large number of grateful letters we receive from those using this column assures us of its importance and usefulness, and it will be continued in the same spirit as in the past.



It must be understood that our Editors are almost entirely independent of us, and can say what they please in these columns in the way of comment and criticism. But they think with us, that no good purpose is served by personal quarrels or criticisms that do not advance our art in every sense of the word. They therefore entirely refrain from any expressions of bitterness, preferring to ignore unjust criticism rather than take up space in these columns that can be devoted to more useful subjects.

Our course during the past year has evidently met with approbation, and we propose to continue in the same, always remembering that we have to advance as the developments in our art progress. During the past year our Editors have had a large fund of material to draw upon to fill these pages, and in the future see the same store of good things photographic from which to select.

We again promise our readers that we will not forget them, and as they help us by their subscriptions we will reciprocate with new and useful features in the BULLETIN for 1887. We are proud of our record in the past, and shall earnestly labor to improve this record in the future.

THE PUBLISHERS OF THE BULLETIN.

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### EDITORIAL NOTES.

IN the last issue of the *Deutsche Photographen Zeitung* we note a review of the American Photographic Exhibition at Braunschweig. The large number of American pictures gave much satisfaction to our German friends, as they were materially different from those of their own artists, the posing being of not such a sober character. The reviewers, Messrs. Einlender, Kuhn and Müller, speak of the excellent effects produced, particularly in the posing and lighting, which was combined with a certain elegance. Speaking of Decker & Wilber's exhibit, they characterize the children's pictures as "most pleasing in the clearness of the lights and shadows." The head of a lady, with strong light effects, is said to show the mastery (meisterschaft) of the exhibitor. J. F. Ryder's exhibit is said to have exhibited remarkable work, and all the pictures are spoken of as technically good. Of G. Cramer's exhibit, the successful posing is noted, and the picture of a resting child is mentioned as "very good and charming." In FitzGuerin's exhibit, the "fisher-boy" is spoken of as "a fortunate selection of the model, and the conception of the idea very good." The ladies' best pictures are noted as "very effective." The form of G. M. Elton's pictures are mentioned as "effective and charming, particularly for the children." G. Barker's Niagara Falls pictures are spoken of as "good and with excellent technical execution." In H. McMichael's exhibit the picture of an "old lady" is noted as "attractive in pose and lighting." Gubelmann's marine views are said to show "very good and clean work." Altogether our American artists have produced a favorable impression across the Atlantic, and should be encouraged to exhibit again.

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MISFORTUNES are sometimes profitable. An amateur photographer in Hartford, Conn., had such an experience lately. When developing a negative of the new memorial arch erected in honor of the soldiers of the Civil War, the gelatine film slipped a little on the plate. The arch looks as if it were bulging out on the sides and coming down. Labeling a print "The Arch during Wiggins's Great Earthquake," he offered it for sale, and, because of its curious look and inexplic-

ableness, the public has bought so many copies that he has made a small financial hit.

At the second annual exhibition of the Hartford Camera Club, we note the following awards to exhibitors: For transparencies, to T. Sedgwick Steele; single portraits, to Mrs. J. C. Kinney; composition pictures, to Herbert O. Warner; two prizes for panels to W. J. Hickmott, and also prize for general excellence and variety; two prizes for panels of platinotypes to Elmer M. White.

In a recent number of the *Photographische Notizen* we find a method for making and using a preliminary bath for accelerating the development of dry plates. Otto Perutz, writes of this method and says: "Where a plate of great sensitiveness is required, as in photographing children or groups, we are able by the use of a preliminary bath to reduce the exposure from one-half to one-third of the time ordinarily employed. This bath is made as follows:

Hyposulphite of soda .....	1 gram.
Bromide of potassium .....	$\frac{1}{2}$ "
Water .....	3,000 grams.

As it is difficult to weigh small quantities, it is best to make stock solutions as follows:

Hypo .....	10 grams.
Water .....	100 "
Potassium bromide .....	5 grams.
Water .....	100 "

using 10 cubic centimeters of each to 3,000 grams of water to make the bath. Use enough of this bath to cover the plate in a flat dish. After exposure bathe in this solution, the dish being covered to keep free from dust, and rock gently for one minute. Then remove the plate and drain without washing, developing with oxalate as usual. The picture will appear very quickly and strong, and the negative will show good detail in the shadows, fine brilliancy and modeling."

OUR MR. T. C. ROCHE, on his return from a recent trip to Washington, D.C., brought back a large photograph of the Capitol, 30 x 34 inches in size, taken with a Dallmeyer R. R. lens, 21 x 25, with the front combination removed, making a focus of seven feet, the diaphragm used being  $\frac{1}{8}$ -inch. The print was made on N. P. A. Paper, and the negative was taken by Mr. George Prince of the above city. The picture is an uncommonly fine one, brilliant and full of detail to the extreme edges; a work of unusual photographic excellence.

MR. FRED. E. IVES, of Philadelphia, gives the following for intensifying negatives used for photo-engraving, photo-lithography, etc. He says that the ordinary methods employed do not give the density that is often necessary in these photo-mechanical processes, even after several applications and the use of alkaline sulphide. He recommends bleaching the negative in bromide of copper solution, thorough washing, and then immersion in a solution of iodide of ammonium, when the color of the negative will change to a yellowish-green. Another washing, and the application of the silver solution, gives a negative more opaque and non-actinic than when copper bromide is used alone.

## THE PHOTOGRAPHIC EXHIBIT AT THE AMERICAN INSTITUTE, NEW YORK.

As usual, the American Institute set apart a portion of its space for the exhibition of photographs. This space was located in the same position as last year, along the north side of the hall. The arrangements for seeing the pictures were generally such as would afford comfort to the observer and throw a good light upon the pictures.

Ehrlich, of New York, had a large exhibit of life-size heads, many of them colored in oils. We were not by any means pleased with either the lighting, posing, or coloring of these pictures, and think they are open to considerable improvement in these directions; nevertheless we believe the pictures are an improvement upon last year's exhibit by the same artist. The crayon work in this exhibit is certainly the best, and a large, life-size, full-length picture of General Hancock is a very commendable piece of work.

Rockwood, the well known artist of Union square, New York, had an exhibit that reflected good taste, much photographic skill, an evident care to do himself justice, and an appreciation of the better taste of those who admire photographic art. As usual, his pictures of children are charming in their happy posing and lighting; and many of them are positively beautiful as examples of photographic art. Several large pictures of dogs are wonderfully life-like, and must engage the admiration of all lovers of these intelligent members of the animal creation. A number of large free-hand drawings by the same artist were also very fine. In this exhibit we also noted untouched large life-size heads that were interesting as examples of fine negative work, but not pleasing from an artistic standpoint.

Bonfils, of New York, showed an extremely interesting collection of Oriental pictures, including scenes in which camels and Arabian men and women formed some exceeding beautiful groupings. These also included Eastern interiors and street scenes. The pictures were admirable as photographs, in addition to their value as artistic representations of Oriental life and character.

Parkinson, of New York, had a good exhibit of large work, a phase of photographic art in which he has attained much skill, and continues to progress. We have often had occasion to note examples of his fine work in these pages, and was delighted with his exhibit at the Institute. In it we noted some most excellent effects in lighting and posing, and the finish of the pictures was both pleasing and artistic.

De Young had an exhibit which was mostly of colored work. Those pictures that were not colored, made the best impression upon us; but even these were characterized by rather hard lighting and somewhat stiff posing.

Fredricks, of Broadway, New York, made a very handsome exhibit. Here we found much good taste displayed in the mounting and arrangement of the various pictures. The large work, for which Mr. Fredricks has quite a reputation, was principally colored. It exhibited uncommon artistic skill in the coloring, and the results gave us some most admirable portraits. A frame of colored pictures of small size were particularly good, and contained quite a number of photographic gems. A large family group was particularly happy in the grouping, the children with their playthings making a most charming picture. A couple of large frames with ordinary cabinet pictures, and a number of large medallions, showed some excellent examples of every day work that had the same impress of care and artistic skill displayed in the larger examples in the exhibit.

Wilhelm, of New York, had an exhibit that pleased us very much, from the



fact that he has made considerable progress over the work shown last year. The improvement is so marked that we must congratulate him upon it most heartily. This improvement is greatest in the artistic finish of the pictures. The cabinets exhibited rank among the better class of work done in New York City; they are not all equally well studied in lighting and posing, but the great majority of them are excellent. We also noted some fine 14 x 17 portraits in this exhibit, which were quite artistic. In these latter the drapery and hair-work were uncommonly well done, and the lighting carefully studied.

Pach Brothers, as usual, had a very handsome exhibit of the particular classes of work in which they excel. Groups of college men, for which they have a well-deserved reputation, formed a most interesting section of their large exhibit. Among these we noted fine groups of the Class of '86 at Columbia and at the School of Mines, which contain many faces well known to us, and each seems to be caught with a life-like reality that makes these pictures so much valued by college men. The Yale crew in their boat is a wonderful piece of photographic work, it is so thoroughly beautiful and full of action. The group of the Harvard crew on land is also fine, but lacks the water that gives the Yale picture its great charm; nevertheless the group is an exceedingly fine one. In portrait work, both large and small, this exhibit showed many fine examples, especially among children. The stage pictures of Kiralfy's "Sieba" we believe we saw last year; they are very fine examples of work done with the electric light. Some large, fine heads of President Garfield and General Hancock also formed part of this exhibit. Another interesting section of this fine collection of pictures was a set of interiors of New York mansions. In this we noted the Stewart Art Gallery, the Japan Room at Mr. W. H. Vanderbilt's, the Veterans' Room in the 7th Regiment Armory, and Mr. William Astor's Gallery, all of which were 11 x 14 inches, and most beautiful pictures of beautiful subjects. A number of other fine examples of photographic work included steamers; yachts, like the Mayflower and Galatea; surf pictures and groups at the sea-shore; and a number of excellent views of West Point and the camp life there.

J. P. Decker, of New York, had a number of fine crayon portraits on exhibition, which were very good examples of this class of work. Those of General Sherman and Ex-President Arthur were very good.

Dana, of New York, had a number of excellent examples of ordinary cabinet and other work of every-day request; but we are surprised that he did not show some of the fine large pictures that we know he has recently made. The pictures exhibited were good examples of his skill, and pleased us very much; but we wished for more of them.

Weismantel, of New York, had a couple of large frames of portraits, full-length figures, and groups of various kinds, quite a number being theatrical people. The subjects were nearly all fine models, but were poorly lighted, and produced some very unpleasant effects; the extremely high lights being so dazzling as to spoil the modeling and give a chalky appearance. The good points in this exhibit were the printing and toning, which to our minds were uncommonly finely done and of a very pleasant character.

Our publishers were unable to make an exhibit of their apparatus, owing to the fact that they were in process of moving into their new large factory. They were so much occupied with this matter, that to make a creditable exhibit was out of the question, and consequently refrained from making any.

We have given our readers an idea of the pictures we saw at the American Institute Fair, and as we looked through the hall, we could not help thinking what a pity it was that the managers of the Institute do not use more effort to encourage our art, and devote less attention to the encouragement of the miserable peddlers of grease eradicators and wretched perfumes. It is a disgrace that so few of our New York photographers are represented in the Hall of the Institute, and the space delegated to a set of miserable hucksters, little above those that line the sidewalks of Broadway and other New York streets. It appears to us that those photographers who do exhibit at the Institute year after year, deserve a special medal for their efforts to save our art from being completely driven from the walls of the Institute. Who is responsible for this neglect of photography? Has not the Institute a Photographic Section? Are none of its members sufficiently alive to the interests of our art to raise their voices for its better representation? It appears to us that a very little effort on the part of somebody connected with the Institute would give New York a yearly exhibition of photographs that would bring thousands of visitors to the hall; not as dead-heads holding free passes, but willing buyers of artistic enjoyment in every sense of the word.

To those who exhibit now every year, we say, go on in the good work, and help to clear out the horde that usurp the place that should be devoted to our art.

To the managers of the Institute we would say: Gentlemen—The time has come when you must give New York City an exhibition commensurate with her commercial position and the good taste of her people. Her citizens will back you in every effort to encourage industry, handicraft, skill in mechanics, and in the fine arts. But they will not help when you encourage frauds, shams and humbugs that are tricks to obtain money by false pretenses.

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### SHORT NOTES FROM THE CAMERA TO THE PRINT.

BY J. J. ACWORTH, F.I.C., F.C.S. LOND.

MOST of the observations which follow are not by any means original; as an amateur photographer, I give them as the results of my own experience and experiment, gathered chiefly in the domain of landscape photography. There is a motto that "when a thing is worth doing at all, it is worth doing well." I think this especially applicable in photography. To do the very best work with the camera, it is no doubt necessary, *a priori*, that the camera and apparatus should be good, though not necessarily the best. It is frequently the case that the man who owns the finest apparatus, never turns out work commensurate with the capability of that apparatus. I lately heard of an English gentleman who, in the few months after he caught the photographic fever, spent over \$2,000 in new apparatus; but that gentleman has never made a decent negative yet. With regard to cheap, yet efficient, cameras and apparatus, the United States are certainly not behindhand, most of the cheap cameras being, as far as I could judge, mechanically perfect.

The question of quality of plates is no doubt of the first importance. When not using my own, I always go in for the best, whatever the cost, knowing they will be far cheaper in the long run. In the States there are, as in England, many brands, each of which is, however, the "best in the market;" but, as far as my own experience of American plates goes, they all vary in quality and sensitive-

ness. Some makers have always the unhappy knack of varying the quality and sensitiveness of their brands. This latter variation is especially annoying. To me it is just like working in the dark, if I do not know what the sensitometer number is of the plates I am using—I think every box of plates ought to be marked with some standard sensitometer number. This is now done by several firms in England. As far as my experience goes, for outdoor instantaneous work, plates under 23 or 24 on the Warnerke sensitometer are very little good either in this country or in the States. It is very remarkable that there are some people who enjoin that there is plenty of actinic light everywhere except in London and in England. My own experience is perhaps limited somewhat. However, I found out after using four or five dozen plates in New York, that the actinic value of the light there seemed no higher than in London. I might also add that I have got pictures with shorter exposures in England than I have been able to do even in a brilliant Italian sky.

What an apparently easy thing it seems to take a view, and how many things determine its success or hopeless failure. I am quite aware that there are many photographers who consider that just sticking up a camera and exposing a plate constitute “taking a view.” There are some photographers who never have and never will take a view (unless by a chance) worth looking at. I remember the story of a personal friend of mine—one in the first rank amongst scientific photographers. He was one day out with the camera, with one of our English landscape photographers of world-wide repute. The latter had fixed his camera in position, bided his time, and just taken the view. “Let me see if I cannot take that same view as well as you,” remarked my scientific friend. He then placed his camera legs in the same holes in the ground, pointed his camera in the same direction and exposed his plate. The result was as was usual with him; it turned out to have not the least artistic value when compared with the result of his artistic friend. Many a view is made by a passing cloud, a slight ripple, or absolute rest or reflection in the making; or a passing attitude of a principal figure; to say nothing of trying to follow out a few art rules relating to balance of light and shade and general line of contour—such of which are at once apparent to a photographer with true artistic feeling. In this much may be done by the amateur by cultivating the art of seeing; patience and practice will do the rest.

As regards developing.—In America, soda carbonate, sulphite and pyro, is the general developer, whilst in England it is ammonia and pyro. Practically one is as good as the other, that is, each will bring out a similar amount of detail; and for the reason that the former has no smell, I prefer it to the latter. Development is certainly an art by itself. Some become clever at it at once, others never attain skill at all. There are several ways in which an improved negative may be obtained, by varying the method whilst bringing out detail. I know an English photographer of great repute who has the greatest repugnance to printing in clouds; whenever he takes a negative he always manipulates the cloudscape in developing, so as to just bring out sufficient printing density, and when that is obtained the developer is washed off and the other details separately developed, more or less, according to circumstances. This means patience, skill and good judgment. A strong or weak developer will often make or mar a negative.

*(To be continued.)*



## THE LITERATURE OF PHOTOGRAPHY.

BY W. JEROME HARRISON, F.G.S.

*(Continued.)*

CHAMBERS' ENCYCLOPEDIA. 1876. Revised edition. Ten vols. Royal 8vo. (Photography in vol. vii, pp. 507-512.) Chambers, Edinburgh. 95s.

C. W. COLLINS. 1853. "Hand-Book of Photography." 12mo. Polytechnic Institution. 1s. 6d.

A. J. COOLEY. 1885. "Cooley's Cyclopaedia of Practical Receipts and Collateral Information in the Arts, Manufactures, Professions and Trades: Including Medicine, Pharmacy, Hygiene, and Domestic Economy. Designed as a Comprehensive Supplement to the Pharmacopœia, and a General Book of Reference for the Manager, Tradesman, Amateur, and Heads of Firms." New edition, revised and greatly augmented. By R. V. TUSON, F. I. C., F. C. S. 8vo. Vol. i, 896 pp. Vol. ii, 880 pp. (Photography in vol. ii, pp. 1276-1282.) Churchill. 42s. Second edition, 1845. Churchill. 14s. Third edition, 1856. 26s. Fourth edition, 1864. 28s. Fifth edition, 1872. 28s. Sixth edition, 2 vols., 1880. 42s.

"Cooley" contains a vast fund of information on almost every subject interesting to photographers.

HENRY COOPER, Jun. 1871. "Hints on the Collodio-Bromide Process." Horne & Thornthwaite, opticians, London.

J. RAND CAPRON. 1878. "Photographic Spectra. 136 Photographs of Metallic, Gaseous, and other Spectra." Printed by the Autotype Process. 80 pp. letter press, 37 plates. E. & F. Spon. 30s.

EDWARD A. COPELAND (author of "The Aquarium and its Lesson"). 1858. "Photography for the Many: containing Practical Directions for the Production of Photographic Pictures on Glass and Paper." 12mo. 32 pp. Illustrated. 20 cuts. *Cottage Gardener* Office, 20 Paternoster Row. 6d.

This little book is No. XI of "Manuals for the Many." It contains a list of a "good and complete set of apparatus," the cost of which amounts to £4 19s. 4d.

F. J. COX was an optician whose business was carried on at 22 Skinner street, from whence it was removed to Ludgate hill in 1866. He was one of the first to supply cheap sets of apparatus. Besides the books named below, Cox wrote on "Spectacles, and their Scientific Adaptation to Defective Vision" (1868); and on "Natural Phenomena: being a Description of the most Interesting Phenomena in Nature" (1860).

1856. "A Compendium of Photography: containing Simple and Concise Directions for the Positive and Negative Collodion, and Printing on Albumenized Paper Processes, with Instructions for taking Stereoscopic Pictures, and the Method of Coloring Photographs." Third edition. F. J. Cox, optician, 22 Skinner street. 6d. Fourth edition, 1858. 55 pp. 20 wood-cuts. Seventh edition. Crown 8vo. 52 pp. 1863. Ninth edition. 60 pp. 1867 (rewritten). Eleventh edition. 64 pp. 1873. Twelfth edition, 1879. Price 6d. Probably most purchasers of photographic apparatus at Cox's shop were presented with a copy of this work.

1858. "The Photographic Tourist: containing Full and Concise Directions for the Production of Landscape and Stereoscopic Views by the Albumenized Collodion Process; with Instructions for Printing Positive Copies on Albumenized Paper, and on Glass for Transparent Stereoscopic Views; also for the Preparation of Magic Lantern Sliders." 12mo. 46 pp. 15 wood-cuts. Cox, Skinner street.

The method recommended is Taupenot's dry collodion, first published in 1855. "Magic Lantern Sliders" shows us the origin of our term "slides."

W. H. S. CRAWFORD. 1853. "Treatise on Photography." Published at Bombay. Sold by Horne & Co., opticians, Newgate street.

Eastern photographers had, and still have, peculiar difficulties to contend with in the climate of India. For such workers the local knowledge of Mr. Crawford enabled him to give suitable advice.

WM. CROOKES is a famous chemist, the discoverer of the element thallium, the inventor of the radiometer, and has distinguished himself in almost every branch of physical science. Thirty years ago Mr. Crookes was deeply interested in photography; edited a photographic journal, and wrote the following book:

1857. "A Hand-book to the Waxed Paper Processes in Photography." Post 8vo. 55 pp. Chapman & Hall. 2s.

The wax paper process is DeGrey's modification of Talbot's original calotype method.

JOHN H. CROUCHER. 1845. "Plain Directions for obtaining Photographic Pictures by the Calotype and other Processes on Paper. Willats' Scientific Manuals, No. 1." 12mo. 40 pp. Illustrated. Published by Willats, optician, 98 Cheapside, and Sherwood, Gilbert & Piper, Paternoster Row. 1s. Fourth edition, 1851, "edited by J. H. Croucher," includes Energiatype, Chrysotype, Cyanotype, Chromatype, etc.; 44 pp. 17 wood-cuts. T. & R. Willats, opticians, 28 Ironmonger lane. 1s.

JOSEPH CUNDALL was a well-known professional photographer thirty years ago. His studio in New Bond street was well known, and he did excellent work in landscape photography. Several expensive books were illustrated by his photographs.

1854. "Photographic Primer for the Use of Beginners in the Collodion Process." 12mo. 32 pp. Sold by J. Cundall at the Photographic Institution, 168 New Bond street. 1s. Second edition, 1856. 32 pp.

The preface states that "In the hope that a few simple directions, given in plain language may help beginners in Photography, this Primer has been written." The first edition is "illustrated with a *fac-simile* of a photographic picture of birds, showing the difference of tone produced by various colors;" the second edition has for its frontispiece a photographic copy of an engraving; "The Printing-Press and Gutenberg."

(To be continued.)

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*All communications for the columns of the BULLETIN should reach us on Monday preceding the day of issue, to insure their publication at that time.*

## UNBOILED EMULSIONS.

By PROFESSOR SPENCER B. NEWBURY, *Cornell University.*

[Read before the Society of Amateur Photographers of New York.]

LAST April I contributed to ANTHONY'S PHOTOGRAPHIC BULLETIN, an article entitled "Notes on Emulsions," in which an effort was made to give a simple and certain method of preparing photographic plates of any grade of sensitiveness, together with the results of many experiments made to show the effect of different conditions of time, temperature, and proportion of ingredients on the rapidity and character of the resulting emulsion. The only new suggestion of any importance which the paper contained was the method of securing a fine precipitate of silver bromide (in my experience the chief stumbling-block in emulsion making), which was accomplished by adding first the silver nitrate and then the bromide, both in crystals, to a warm solution of gelatine containing alcohol. I have had several very gratifying letters from friends who have used this formula, all reporting complete success in working it, and great satisfaction with the resulting plates. There are however some interesting results to be obtained by using this emulsion in an unboiled condition, of which my original paper contained no mention.

All writers on emulsion-making, insist that the emulsion shall be "red by transmitted light." This is a condition which implies great fineness in the precipitated silver bromide, and is very easily obtained by the method given above. In my earlier experiments, using other methods of emulsifying, I used often to obtain an emulsion of which a drop spread on glass and held against the light showed a reddish tinge, and supposed that the condition demanded had been secured; but never, until I hit upon this method of mixing did I see an emulsion which was "red by transmitted light" in the extreme sense of the phrase. The fineness of the precipitate obtained as I have described is such, that a drop of the emulsion spread on glass shows a bright orange-red color; a drop of emulsion mixed with a beaker of pure water imparts to it a pale blue opalescence, like that of some specimens of refined kerosene; an opalescence which does not disappear by subsidence even after standing for weeks. On boiling the emulsion, the particles increase in size, as is well known, and these peculiar qualities disappear. It occurred to me to try the use of this emulsion in an unboiled condition, principally in the hope of obtaining a fine plate, free from granularity, suitable for fine lantern slide work.

The operation of washing and making up an emulsion of this kind is the same as in the case of rapid, boiled emulsions; the coated plates, however, present, after drying, a very different appearance. Even though quite a heavy coating of emulsion be used, the film, after drying, is so transparent as to permit the shape of a gas flame to be seen through the plate with ease; the film is extremely glossy, and when held against white light shows the peculiar orange color of the freshly prepared emulsion. All who have worked with wet plates will remember that they show nearly the same color by transmitted light.

These plates are very slow, probably about as rapid as wet plates. They show a Warnerke sensitometer of 2 to 3, and in my hands require for an open view with Dallmeyer's rapid rectilinear lens, smallest stop, about ten seconds exposure; whereas a rapid Stanley plate, showing 24 on the sensitometer, required an exposure of only one-half second. The resulting negative is however a very interesting and peculiar thing. The shadows are represented by absolutely clear glass as in a wet collodion plate, while the lights show every grade of transparent brown



color of increasing depth, like dark brown glass. These qualities, especially the perfect clearness, good color, great density, and yet extraordinary range of half-tones, and freedom from grain of any description, make the plate an almost perfect one for lantern-slide work. For this purpose oxalate developer gives, I think, the finest results, although I have made beautiful slides with the pyro-potash developer. The color of the slide is in either case a dark olive-brown, totally different from the cold gray tone which is always obtained with a rapid plate. The color can be changed to a deep purple by a very slight intensification with mercury and sodium sulphite, but I do not think that this is any improvement in most cases. I have used many commercial lantern-slide plates, and though some of them are excellent, I have never found any that were in any respect superior to the plates made in the simple manner that I have described. The operation of preparing them is so easy, that I have been able to train one of our students at Cornell to prepare the emulsion, coat the plates and make slides from engravings or photographs, and he is now turning out three or four hundred slides a month for use in the various departments of the University.

As a general rule, it is probably better for the amateur or professional photographer to content himself with the plates which are to be obtained in the market, and not to encounter the many perplexities of emulsion making. But the operations of making these slow plates are so simple, and the results so certain and so gratifying, that I heartily recommend any one who has become interested in lantern slides to try the experiment of making some of these plates for himself. And after this task has been mastered and the manipulations learned, a very slight change in the proportion of bromide used, and half an hour's boiling of the emulsion, will give a plate as rapid as any in the market. I shall be very happy to give any further information that may be desired to any one who thinks of taking up this last accomplishment of photography, and can safely say that the pleasure of using the best commercial plates is far less than that of exposing and developing plates prepared by one's own hands.

The fineness of the precipitate of bromide of silver in the emulsion I have described, depends solely on the method of emulsifying, and the amount of excess of soluble bromide present appears to have no effect on the character of these slow plates. But if the emulsion is boiled, the proportion of bromide has a great effect. Using 32.5 grams of silver nitrate, I find that with 28 grams of potassium bromide and half an hour's boiling, a very rapid plate is obtained (23-24 on the sensitometer), which has about the quality of the best commercial plates. With 25 grams of bromide however, the plates are much less sensitive (15 on the sensitometer), but present almost exactly the qualities of the lantern-slide plates, *i. e.*, the same peculiar brown color and fineness of the deposit. Plates so prepared are those which I prefer for landscape work.

I have made some interesting experiments with these lantern-slide plates made with unboiled emulsion. In the first place, it has been stated that the medium in which the silver bromide is suspended has a great influence on its sensitiveness, and that it is partly for this reason that gelatine plates are more sensitive than collodion. To test this matter I tried the experiment of soaking these lantern-slide plates in weak nitrate of silver solution, exposing them wet, and developing with an ordinary wet plate developer, consisting of a solution of ferrous sulphate made strongly acid with acetic acid. The experiments were successful; the plates developed quickly and without fog or stain, giving a result

much like a wet plate, but with a more reddish deposit. The sensitiveness was about the same as an average wet plate. Hence it appears that the bromide of silver in an unboiled condition is no more sensitive when suspended in gelatine than in collodion.

Secondly, it has been stated that the sensitiveness of gelatine plates over wet collodion plates is in part due to the fact that since the former contain no free silver nitrate, it is possible to use alkaline or neutral developers, *i. e.*, pyrogallol and ferrous oxalate, which were said to be more powerful than acid ferrous sulphate. I find, however, that if two of the plates be given equal exposure, and one moistened with nitrate of silver solution and developed with wet plate developer, the other developed directly with ferrous oxalate or pyro, the latter appears considerably under-exposed; showing that the mechanical development is more energetic than the chemical.

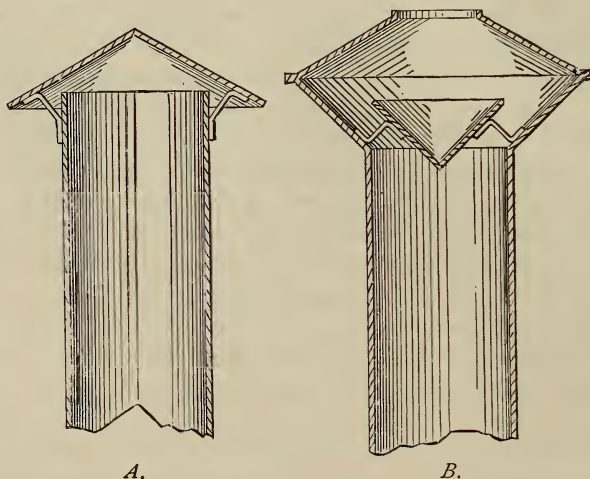
It is well known that a rapid plate cannot be moistened with nitrate of silver solution and developed with wet plate developer without the appearance of fog and stain. The fact that slow plates, made from unboiled emulsion, may be so developed, shows that the cause of this fog is to be found in the decomposition of the gelatine during the operation of boiling. I find, in fact, that plates made from unboiled emulsion may be successfully intensified with pyro and silver, in the same manner as negatives made on wet collodion plates.

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### CHIMNEYS FOR ENLARGING OR MAGIC LANTERNS.

BY F. C. BEACH.

ON making some experiments with enlarging lanterns, I found, when a powerful light was employed, which demanded a strong draft to keep it up, that if an ordinary chimney-top, *A*, was placed on over the smoke-pipe, a very perceptible diminution of the light on the screen was observed, and was readily accounted for, from the fact that the upward draft of the heat was checked by impinging directly against the under side of the cone, and then escaping at the side.



In using an oil lamp for enlarging, every means should be utilized for favoring the free escape of the heat and promoting the draft. A long chimney is particularly useful. I had constructed the chimney top shown in *B*, which answers

the purpose admirably. The upper end is enlarged similar to a locomotive smoke-stack, and over the center of the pipe is held, by iron strips riveted to the pipe, a small inverted cone. As the heat ascends it is simply deflected slightly and escapes as if through an open pipe, while the light, at the same time, cannot escape since the edge of the inverted cone slightly overlaps the circle of the smoke-pipe. The area of the upper opening above the cone should be the same as that of the smoke-pipe below. The smoke-pipe of the Amateur Society's optical lantern is constructed on this principle and never fails to conduct the heat off perfectly. I commend it to those troubled with smoky lamps and imperfect combustion.

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## ON PHOTO-MICROGRAPHY.

BY W. H. WALMSLEY.

[Read before the Photographic Society of Philadelphia.]

I CONFESS to some feelings of hesitation in appearing before you this evening with a paper on the above subject. "Walmsley's Bugs," as some facetious fellow members have dubbed my occasional displays of microscopic objects, projected upon the screen by means of our optical lantern, may not prove to be an interesting theme to many of you, although its scope is boundless. But having been honored by an invitation to read a paper here, I think it proper to choose a subject with which I am somewhat familiar, even at the risk of presenting one which may not be of special interest to all of you. If, however, I can be instrumental in turning the attention of even a single member toward this delightful branch of photography, I shall be amply recompensed for the slight labor involved in so doing.

During the winter interregnum, when outdoor work with the camera is generally uncomfortable, if not impracticable, we recall our past summer's experiences by making prints and lantern slides from the negatives obtained at that time; and many a pleasant day is repeated in retrospection thereby. Thanks to the general introduction of bromide paper, we are rendered independent of daylight for this work, a great boon to those whose only leisure comes in the long evenings of winter. The making of a negative is, however, to very many, even a greater pleasure than the print therefrom, and I venture to assert that more than one now present, has many negatives in his possession from which he has never made a print, and probably never will; yet the desire to produce more negatives is never satiated. To such, the field presented by photo-micrography is an attractive one, full of novelties; of boundless scope; and readily entered upon by all.

Many of our members were but a few short years ago enthusiastic microscopists, until lured from their first love by her younger and more attractive sister, photography. Most of them retain their now unused microscopes and cabinets of prepared objects. They have all the necessary materials and appliances for combining the science and practice of microscopy with the practice and art of photography, and could produce work which would be of practical and educational value to themselves and others, if they would only do so. A general advance in this direction is being made all over our own country, as well as in Europe, and I should be greatly pleased to see members of our own society joining therein.

The most simple method of making a photo-micrograph is by means of a



small camera or box, carrying a sensitized plate placed above the eye-piece of the microscope. My first work of this kind was done with the so-called pocket camera of Walker, a small square box without bellows, carrying a plate  $2\frac{3}{4} \times 3\frac{1}{4}$  inches, the focusing of which was effected by sliding the tube carrying the lens in an outer one, fitting it loosely enough for that purpose. Whilst examining the eyeless flea of the mole one winter's evening, I was seized with a longing to photograph it. Acting upon the impulse, I removed the lens tube from this little camera, and found that the outer one, attached by its flange to the front of the box, exactly fitted over the eye-piece of my microscope, throwing a brilliant and sharply-defined image of the flea upon the ground glass. A plate holder and plate were quickly substituted for the latter, and exposure made by guesswork; the result being a fairly good negative, from which a lantern slide was subsequently made by contact printing, which will be shown on the screen during the evening. This was my first photo-micrograph, and opened up a new field, which I have since cultivated with both pleasure and profit.

This method of using the camera has since been elaborated by Dr. Mercer, of Chicago, and a little instrument bearing his name, attachable to any microscope, is now a regular article of sale by photographic stock dealers. It is a valuable addition to the accessories of a microscope, especially so to the biologist, who frequently in his researches finds some subject the preservation of whose outlines would be of great value, but which undergoes such rapid changes that no time must be lost in so doing. With camera and ready charged plate holder at hand, an exposure can be made in a minute or two, and valuable details secured which would otherwise inevitably be lost. The field of view, however, is extremely limited; only the center of the very small plate is illuminated, and the entire results are of a temporary and unsatisfactory nature.

Later, Mr. H. F. Atwood, of Rochester, devised an apparatus for this purpose, combining both microscope and camera in one. Upon a solid platform is placed a cone-shaped box, having at the large end a focusing screen and plate holder, whilst the smaller end is terminated by a short brass tube with set screw, carrying any ordinary microscope objective. The focusing is effected by means of a rod passing under the body of the box to its rear, and terminating in a milled head. The glass slide carrying the object is clamped upon a circular stage firmly fixed in front of the object glass, the illumination being from a lamp placed behind the stage, the direct rays from which are utilized without the intervention of any mirror. This is a fairly effective piece of apparatus, its chief defect consisting in the absence of a bellows body; the focusing screen and plate holder remaining at a fixed distance from the object, requires a change of objectives for any necessary change in the amplification. It answers the purpose of its design fairly well, but cannot be recommended for general work.

Following my first experience with the Walker box placed over the eye-piece, the next advance in a practical direction was the employment of an ordinary view camera mounted on a tripod, and with the lens unscrewed from the flange upon its front. The microscope was placed upon a table with the body inclined to a horizontal position, the eye-piece removed, and the tube inserted into the body of the camera through the open flange; the tripod being adjusted at a proper height and position to suit the table. The entrance of extraneous light into the camera through the open space between the tube and flange, was prevented by a piece of blackened card-board made to fit tightly to the microscope body. The

lamp was placed on the table in the rear of the stage, and its light condensed upon the object by means of a bull's-eye upon a separate stand. The result of the first exposure with this contrivance, (the subject being the tongue of a drone fly), was a negative full of fine detail, a vast improvement on my first attempt, but with a decided "ghost" in the center, which you may see for yourselves, as it will now be passed around.

Since no authorities at my disposal threw any light upon even the existence of this "ghost," I was forced to seek its cause for myself, which I soon succeeded in doing; tracing it to reflections from the interior surface of the microscope tube. A cylinder of paper, covered with dead black velvet, or wool flock, placed within the body of the microscope, completely exorcised my ghost, and I was troubled by it no more. And here it will be proper to say that in using any microscope for photography with a body from which the eye-piece has been removed, it will be necessary to thus line the interior with some non-reflecting material, to prevent the occurrence of ghosts in the negative. If, however, the exposure be made through the eye-piece, the lining will not be necessary.

The defects of this form of apparatus speedily became apparent. The bellows extension was not sufficient to give much of a range of magnifying powers with any given objective; the tripod was not steady enough to permit the use of any but very moderate powers; whilst microscope and camera being carried upon separate supports, were not equally effected by any jarring of the building by passing vehicles or other causes; the result generally being negatives somewhat blurred, and wanting in the crisp sharpness which the image presented upon the focusing screen. This led to the abandonment of the tripod, and the placing of camera, microscope and lamp upon a common platform, so that any tremor or motion was distributed alike to all parts of the apparatus, completely curing the blurring trouble.

The practicability of photographing microscopic objects by lamp-light, even with very high powers, having been fully demonstrated, improvements in the form of apparatus and methods of manipulation followed. A special camera was devised, with a cone-shaped front to receive the microscope tube, and with the bellows in two or more divisions, allowing a long extension of the same when increase of power was necessary; since the farther the plate is removed from the object, the greater the amplification with any given objective. The box and plate holder were square, so that the plate could be exposed in either horizontal or vertical positions, as best suited the object upon the stage, without having to reverse the camera. The holder itself was a single one (for reasons to be given hereafter), carrying a half-size plate ( $4\frac{1}{4} \times 5\frac{1}{2}$ ), and furnished with a kit for using a quarter-size plate when the latter should be necessary. This camera was firmly attached to the platform upon which microscope and lamp were placed, and the whole apparatus was eminently practical and efficient. I used it for more than a year without modification, and remember it with a certain degree of affection, even in the presence of the more perfect and elaborate outfit which has supplanted it, and which I have the pleasure of exhibiting to you this evening.

In this improved form of camera the general features of its immediate predecessor have been retained. Size and shape remain the same, but the long V shaped ways upon which the bellows slide, are made in two sections for greater convenience in manipulation when only a short extension is required. The

central section of the camera is fitted with a removable division, to which an ordinary rectilinear lens can be attached; access to which is had through a small light-tight door in the side of the box. The cone front may also be removed, and its place supplied with a board carrying a flange, to which the lens may be screwed; thus converting the box into an excellent copying camera. Kits to carry either half or quarter-sized plates, vertically or horizontally, are also supplied with this front, which is double shifting to allow the placing of any desired portion of a negative in proper position when a lantern positive is to be made. In short, the camera is now a most excellent enlarging, reducing and copying one in miniature, replete with every convenience and appliance to be found in the largest copying boxes made especially for that purpose. It is no longer necessary to make the negatives with a view to printing lantern positives by contact; they can be reduced or enlarged to the proper size in the camera and are far sharper and better in every way than those made by contact in the printing frame.

(*To be continued.*)

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[From *Photographisches Wochenblatt.*]

### MY CYANIN EXPERIMENTS WITH GELATINE EMULSION.

BY V. SCHUMANN.

(*Continued.*)

*The application of the plates for taking colored objects.*—Next to the kerosene light, gas and glow-light will exercise a considerable red action upon cyanin plates. The richness of both light sources in illuminating rays is of great advantage to photography. We are thus enabled to fix, photographically, pictures of colored objects in such a way, that they act upon our eyes in proportion to their optical clearness. A bright orange must act upon the cyanin plate just as powerfully as an equally light blue. That this is the case, I have proved by a number of copies from colored oil paintings. With a very simple illuminating arrangement we are now enabled to make, by artificial light, copies of colored objects in proportion to the true value of their clearness, and even with more certainty and color-correctness than in the sunlight, which deviates continually.

The artificial light requires generally no ray filter to take color-correct views, its richness in yellow and red rays making this unnecessary. Exposures in sunlight should never be made without a colored glass to decrease the excessive action of the blue rays.

Those who have taken pictures of slowly acting objects with much red and brown, together with blue and green, in sunlight, will know how easily good color-sensitive gelatine plates fail to do service orthochromatically with the application of light yellow glasses, and only work to satisfaction when the too active blue light has been still more suppressed by darker glasses. The incidental prolongation of time of exposure is an evil not to be under-estimated. Taken from this point of view, the artificial light increases considerably in value for the whole of reproductive photography so far as the taking of colored objects is concerned, and it will also be of advantage for interior views, such as the uncolored plate, no matter how sensitive, is not able to offer. It seems therefore as if sunlight; for certain branches of photography, should have a rival in the form of our modern appliances for lighting our rooms. But even so, I do not believe that it



will be of long duration. For as soon as the orthochromatic plate advances towards perfection, as it has done during the last two years, it is to be expected that its capability in being sensitive to red and yellow may be increased so much as to take views in solar light without ray filters.

The flames of the kerosene light, as well as gas and glow-light, vary in their coloration according to their intensity. The yellow color decreases generally with the increase of brilliancy. This peculiarity of artificial light points evidently to a reduction of the yellow rays and a rise of the blue ones. But under such circumstances a yellow glass would have to be again applied in more intense artificial light, and the action of the increased intensity would thereby be reduced. The question now arises, if this subjective impression, from which one might be induced to judge the photographic value of the light sources, has in each case a claim to reliability? As I was not enabled to make experiments in this direction, I would draw attention to an appearance which proves how uncertain the color impression which the light produces in our eye sometimes is.

If the solar spectrum is observed through the narrow slit, the colors of red, yellow, green, blue, indigo and violet can be distinctly distinguished. With the widening of the slit the clearness of the spectrum increases, and the colors pass over in rotation almost into white.\* This change takes place quickest in violet, while red keeps its original coloration the longest, and changes to a very light yellow, almost white, only after increased brilliancy.

If a flame emits red and yellow light it will generally be of a red coloration; but with the increase of this light intensity it will appear to us more white. For the above mentioned light sources these conditions have been pretty nearly fulfilled; they emit particularly red and yellow rays, and only a very few blue and violet ones.

According to this, it may be accepted that we can also apply artificial light of the highest intensity to orthochromatic photography without yellow glass.

The question may now be asked: What advantages does the bathed cyanin plate offer, and if the cyanin accomplishes more than the other excellent sensitizers (eosine) which have been used in photography so many times with success during late years?

Before I speak about the advantages of the cyanin plate, I will mention once more its weak points, in which it is distinguished from other color-sensitive films.

The tendency to formation of spots is considerable with cyanin. Irregularities appear much more frequently during bathing than, for instance, with eosine, but there is no need of apprehension so long as my formula is observed. Still there is yet no guaranty in the pure film for a blameless negative. The development requires, as demonstrated before, particular attention. But if a little care is exercised, complete success is secured, even in this part of the treatment. Still the cyanin plate possesses another fault—it is not durable. The quickest change takes place in baths which contain too much ammonia; more durable films have been produced from solutions containing alcohol. I have observed on plates which had been kept for several weeks, decrease of sensitiveness as well as strong formation of fog. The cyanin is therefore not very suitable for the manufacture of orthochromatic plates on a large scale. To those who want to sensitize their

\* I have repeatedly observed this appearance with my spectrograph (the same being arranged also for the subjective spectrum) by application of a single prism of 60 degrees.

own plates, I would for the same reason give the advice never to prepare more than are required for the next few days.

But, in opposition, the bromide of silver gelatine plate, bathed in ammoniacal cyanin solution, possesses a greater number of excellent properties than almost any other plate.

If a plate colored with cyanin in the liquid emulsion is exposed to the solar spectrum, it will be found that the action commences first in blue, and always a little later in orange, between C and D. With prolonged exposure a third maximum at  $D \frac{1}{4} E$  can be observed, but it can easily be passed over, not being so distinct. Upon a bathed cyanin plate, on the contrary, the three maxima rise almost simultaneously, and with strongly sensitized plates the spectrum appears even in orange and yellow a little higher and more dense than in blue. The cyanin bath has therefore not only sensitized stronger for red than the cyanin solution in the liquid emulsion, but it has also increased the sensitiveness for yellow so remarkably, that the bathed cyanin plate can compete with the best eosine plates for yellow rays; eosine sensitizing only for yellow, but not for red. And as no sensitizer is known to equal the cyanin, the cyanin plate seems to surpass all orthochromatic plates in color and total sensitiveness.

It has also been asserted that eosine offers the same advantages as cyanin for color-correct views. But all who have worked with both coloring matters, and interested themselves about their spectral behavior, will, like myself, be convinced that cyanin can never be replaced by eosine.

If the photographic picture of a surface is to be taken which, in its coloration, is near to the spectral red, it can easily be seen, with the aid of a spectroscope, that the surface emits not only red, but also orange and yellow, mostly also green and blue. The rays of both of the first mentioned colors have not the least effect upon the eosine colored film. The photographic effect of the red surface is therefore reduced nearly to the component colors of red and orange, while they accelerate the decomposition of the bromide of silver under the influence of cyanin.

The maxima of the cyanin bath plate in orange and yellow, although of the same height, have quite a different value for orthochromatic photography. The cause of this is in the different proportions of brilliancy of the several colors of the solar spectrum. Supposing the clearness between D and E was 100, then the strength of light between C and D will be approximately 50. According to this an artificial yellow (correctly, green-yellow) would require double the exposure than just such a light orange, whereby, of course, no attention has been paid to the refraction of the other rays mixed with the same.

Much more favorable would, for instance, the proportions be if the maximum was displaced a little, being at C instead of between C and D. The plate would then be for red, not twice, but eight times as sensitive as for yellow. This shows that the orthochromatic value of the light sensitive film increases with its sensitiveness for the less refractive red rays—another advantage of the cyanin gelatine—the orange maximum increasing considerably towards red after longer exposure; while, under similar circumstances, eosine will effect only an insignificant increase of sensitiveness for orange. All red pigments must consequently be reproduced considerably more intense under a somewhat prolonged exposure than when normally exposed. This conclusion agrees with what I have found in photographing colored plates.

*The value of the plates for spectrum photography.*—My experiments with cyanin gelatine were originally directed to the photography of the spark-spectrum, and only later on I extended them to views of colored objects. To this is to be ascribed my working originally with the Geissler tube and the electric spark. Whatever I have observed in taking these spectra is not sufficient to determine the value of the cyanin bath plate for spectrum photography. Still I obtained results deserving consideration.

The red and yellow bands of the nitrogen spectrum exercised a powerful action, although I was not able to fix them as quickly as the hydrogen line,  $H_a$ , which gave a distinct picture in 75 seconds. Of the colored spectra, that of  $P_a$  deserves mention, whose red line was  $\lambda$  6656; and several others in orange disclosed also a very good action.

Lines which appear weak cannot always be recognized easily. With the best glasses (Aplanat of Zeiss, Jena; enlargement 5, 10, 20 times) and with excellent illumination, I have sometimes not been able to discover even a trace of some lines, and still I could prove afterwards their photo-chemical action. The property of the potash developer to give the negative the character of a relief picture helped me to this. The finest line and the most tender light impression, so long as it can be developed, is visible in reflected light, and even better in the soaked film than upon the dry plate. With a sharp glass of larger focus, and in reflected daylight, all lines can be seen in intaglio on the gelatine film, and among them such as are entirely invisible in transmitted light. I hope I may be able to make the latter visible yet in my measuring instrument, and in the same manner as the resolution of the fine divisions of the reflection grating under the microscope.

The spectra upon cyanin plates are particularly clear. I have repeatedly observed this formerly and find it now confirmed. For thin line groups (solar spectrum) of every refraction, the presence of cyanin offers quite prominent results.

I have already mentioned before that a certain quality of AgI fits it for spectrum photography. No more than five per cent. AgI should be taken during emulsionizing; and it should not be forgotten that the more sensitive modification of the bromo-iodide of silver will only form when the silver haloids are precipitated together in the gelatine.

But if spectrum red or yellow only is to be taken, then it will be better to leave out the AgI, and be satisfied with less brilliancy, in order to obtain the highest red sensitiveness. If at the same time the photography of the more refractive spectrum is intended, AgI should always be used. Besides brilliancy, the iodide of silver will also increase the sensitiveness for the rays of F and its neighborhood, which is the district which resists coloration so persistently in the spectrum upon cyano-bromo-gelatine. Emulsionizing after the oxide of silver ammonia method of Professor Eder is at least, in this case, to be given the preference.

*Translated by H. D.*

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GENTLEMEN,—Inclosed please find P. O. O. for 15s. 6d., one year's subscription to the BULLETIN, commencing January, 1887. I must say about your paper that it stands alone and without a rival, for we have none like it on this side. The loss is mine that I did not subscribe for it sooner.

Faithfully yours,

HAROLD SANDS, Nottingham, England.



# PHOTO-CHEMIGRAPHY.

By OTTO SOMMER, *Technical Assistant in the Austrian Military-Geographical Institute.*

A DESCRIPTION is given and explained in this paper of a photo-chemigraphic transfer method of Mr. Mariot, as a preparation for the relief and intaglio process upon zinc; and an etching method of the writer. The transfer method offers the advantage that, even from a weakly intensified or foggy negative, perfectly good transfers can be obtained with facility, as in such cases even the finest lines of the drawing will set off clear and sharp from the planium, and the stronger parts will be completely covered. These transfers will therefore bear a much stronger etching than such as are produced with a greasy ink, the latter appearing most porous, and very seldom possessing the desired sharpness. The process of Mr. Mariot has the further advantage that such a transfer upon the zinc plate can easily be changed to a negative picture, and intaglio-etchings can be obtained from it.

In regard to the relief etching, it is to be remarked that in principle this method may equal those already described in several journals, but that it differs greatly from them by its simplicity and security of manipulation. With the least attention a failure is hardly possible, and the character of the picture, by a combined effect of soft and strong tones, cannot be lost. The writer has not neglected to test other etching processes for comparison, but has always fallen back upon his own.

## I.—THE TRANSFER PROCESS.

The principle of this process consists in the changing of a picture, made by photographing upon gelatine paper, into a resinous picture, and its transfer upon a previously heated zinc plate.

1. *Production of the gelatine paper.*—A glass plate is placed in a strictly horizontal position, with the aid of a pair of water levels; a sheet of strong paper is left to soak and flatten thoroughly in water for about six minutes, and is then laid upon the plate; the superfluous water is removed with a squeegee, and the edges bent upwards. A warm gelatine solution of 25 to 30 degrees R. (90 to 100 degrees F.) is now poured upon the sheet and distributed with a strip of paper. The gelatine solution consists of 400 grams distilled water, 10 grams gelatine, and 2 grams glycerine. This quantity is for one sheet 78 x 95 c.m. (30 by 37 inches). After 6 to 8 minutes the gelatine becomes rigid, and the sheet is laid upon a frame covered with some cloth, and is left to dry in a place free from dust.

2. *Sensitizing of the paper.*—The gelatine paper is bathed in a solution of bichromate of potassium, 1 to 15, until it becomes flexible, and is then laid with the gelatine side down upon a well-cleaned glass plate. The liquid remaining between glass and paper is again removed with a squeegee, and the paper is left to dry in a dark place. When it is taken off the glass plate, it has the gloss and smoothness of the glass, thereby allowing clean and sharp copies to be made. During the summer months care has to be taken that the bichromate of potassium bath is not warmer than 14 degrees R. (63 degrees F.), as otherwise the paper cannot be stripped from the plate; if necessary, it may be cooled in ice or very fresh well-water before the sensitizing of the paper.

3. *Exposure and development of the picture.*—A paper prepared in this manner

is exposed, according to the character of the negative, 10 to 12 degrees by Vogel's photometer; the copy is slightly moistened on the back with water, stretched and fastened upon a glass plate with glued strips, and left to dry from 10 to 15 minutes, and the picture side is flowed with the afterwards described resin solution in the same manner as is done with collodion. After the resinous film is dry, the copy is removed from the glass plate and laid from one to two hours in cold water, causing swelling of the unexposed parts of the gelatine. For the purpose of development, the still wet picture is placed upon a glass plate, and the resinous film is removed with a soft, wet sponge from the gelatine changed by the swelling. The resinous film adhering upon all parts where no swelling took place, a clear sharp picture can be developed by continued washing, executed in circular motions, and lasting from 10 to 15 minutes, after which it is rinsed with water and drawn several times through a chrome alum solution (1 to 200) and suspended to dry.

4. *Preparation of the resin solution.*—This consists of 10 grams asphaltum, 10 grams Venice turpentine, 4 grams white wax, and 200 grams coal-tar benzene (benzole). For the purpose of production, the given quantities of asphaltum and wax are melted together, while the Venice turpentine, having been thickened somewhat by heating, is dissolved in the corresponding quantity of benzene. The latter solution is added to the still warm and liquid asphaltum wax mixture under constant stirring. This resin solution is then put into a narrow, tall bottle for the purpose of precipitating all impurities and left to stand for 24 hours, but it has to be filtered through paper before use each time. If a thickening of the liquid should take place in the course of time on account of the volatility of the benzole, this is brought back to its correct consistence by addition of more of the solvent. The solution has always to be so diluted that the chrome picture is distinctly visible through the resin film.

5. *The transfer of the resin picture to the zinc plate.*—For transferring the print of such a developed resin picture, a lithographic or lichtdruck press can be used. A well polished zinc plate which just before use has been polished with alcohol and emery (not with chalk, as the print will not adhere) is prepared and heated to 40 to 45 degrees R. (122 to 144 F.). The copy is moistened a little on the back with water, to make the paper flexible. The edge of the plate and that of the picture to be printed, with a protecting sheet, are then put together under the roller of the press, but care must be taken that the picture comes in contact with the warm plate before the pressure takes place, as otherwise the asphaltum picture will, without pressure, leave traces upon the warm plate which would cause a duplicate picture. The plate, with the copy, passes twice through the press, to make sure that all parts of the picture have properly come in contact. The plate, with the picture adhering thereupon, is then placed for about two hours in a solution of chloride of lime (1 part chloride of lime to 50 parts of water). After this time it is dried with blotting paper, the back of the copy still adhering to the plate, and sponged with a mixture containing 2 parts acetic acid and 1 part alcohol. This mixture quickly penetrates the paper, softening the insoluble gelatine, and it is possible to strip the paper with gelatine film from the plate, leaving behind the resin picture. A transfer so produced possesses all the advantageous properties needed for the relief etching process. This method of transfer for relief and intaglio etching can be executed upon other metals just as well as on zinc.

6. *The reversing of the picture upon the plate for intaglio etching.*—To obtain intaglio etchings, the printed positive picture on the plate has to be changed into a negative. This is done by pouring over the print, which has been previously heated a little, a shellac solution, consisting of 10 grams brown shellac, 2 grams aniline blue, soluble in alcohol, dissolved in 250 grams absolute alcohol, drying, and then placing the same in a mixture of 2 parts rectified oil of turpentine and 1 part benzine. After a few minutes the lines of the asphaltum drawing will loosen and can be completely removed with a brush. Shellac not being soluble in this liquid, while asphaltum and wax dissolve easily, the drawing must disappear gradually, leaving only a sharp and clear negative upon the plate.

This is quite visible, on account of the aniline color in the solution, and gives sufficient protection against acids.

(*To be continued.*)

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## OBITUARY.

JOHN LAIGHTON.

THE above member of the well-known firm of Loughton Brothers, of Norwich, Conn., died at noon on December 8th last, at the age of forty-two. He was well known as an enthusiastic and industrious worker in our art, and leaves a name that is united with the best attributes for kindness, honesty, and sterling social qualities.

John Loughton was born at Farmington, N. H., in 1844. Thence he removed with his parents to Greenwich, R. I. He received a good common school education, was well read, and a pleasing conversationalist. Early in life he established a taste for art, and studied portraiture with James Lincoln, of Providence, and Jones & Tenney, of New Haven. About ten years ago he became associated with his brother, William Loughton, under the firm name of Loughton Brothers, and the studio of these artists has become well known throughout Connecticut. The *Norwich Bulletin*, in speaking of his death, says:

Reared of Quaker parents, he inherited the candor and sterling honesty which characterize that sect, and as a man he was an honor to his parents, as well as himself. He lived an upright life, which marked him as a man of pure thought, good motives and an honest purpose.

We extend to his bereaved wife and brother our most sincere sympathy in their loss of one so highly esteemed by those who knew him best.

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## OUR ILLUSTRATION.

OUR illustration in this issue is printed from a plate engraved by the photogravure process of the Photogravure Company, of New York. It is one of a series of illustrations of Tennyson's "Song of the Brook," published by Muns & Knight, of Troy. The whole work consists of fifteen plates similar in character, each illustrating a stanza of the poem, with the words daintily made a portion of the picture. Each plate is printed in a different color on heavy paper made specially for the book, which is a large quarto (12 x 9), handsomely bound in cloth appropriately stamped. The whole work was produced under the direction of the Photogravure Company, from drawings made expressly for the purpose by



Mr. W. J. Mozart. It may interest our readers to know that Mr. Mozart uses photography largely in his work. In fact many of his compositions in "The Brook" are inspired by "bits," which he has himself photographed from the Sleepy Hollow Brook at Tarrytown. The original drawings are in wash, and having been engraved by photogravure on copper, are then printed by the ordinary copper-plate method. This process of photogravure is destined in the near future to excel all other methods of photo-mechanical printing where the most artistic work is desired, as it is alike suitable for views, portraits, and works of art, while the cost of printing does not exceed that of other methods.

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#### AWARDS AT THE EXHIBITION OF THE AMERICAN INSTITUTE.

SILVER MEDAL for Taste in Portraits to C. D. Fredricks. Bronze Medals of Superiority to M. B. Parkinson for Water Colors, and George G. Rockwood for Photographs. Bronze Medals of Excellence to E. C. Dana, Pach Brothers, and R. Wilhelm. Bronze Medals of Merit to Bonfils & Simar, William Weismantel, David Ehrlich, Tanqueray Portrait Society, Joseph De Young, and J. P. Decker.

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GENTLEMEN,—I highly appreciate the BULLETIN, and think it the best journal published on the subject of photography.

Respectfully, L. S. STEVENS, Michigan.

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GENTLEMEN.—I am very much delighted with the BULLETIN, and think that the illustrations alone are worth far more than you ask for the book.

Yours respectfully, G. HENRY SHEARER, Michigan.

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YOUR BULLETIN is filled with unrivaled information, and seems to have the best of brains to push it forward in chemical science, and its kindness is unparalleled. May it continue to be the leading BULLETIN of the photographic world.

Yours very truly, W. B. COOK, California.

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I WOULD not be without it for three times what it costs. I look for it two or three days before it gets here. Wishing you much success,

I remain, yours truly, E. O. DUFFEE, Pa.

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A YOUNG BOY who recently left his St. Paul home to attend a preparatory school is not much taken with the change. He is suffering his first case of home-sickness, and naturally desires to return to his home. In making known his desires to his father in a recent letter, he said: "Dear Father: Life is very short; let us spend it together. Your affectionate son."—*St. Paul (Minn.) Globe*.

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A SEASONABLE CONUNDRUM.—Why is a thaw like a thing that can't be done? Because its snow go.



*and is it not better to use more of it in toning than is generally recommended?*

They are put up in bottles claiming to be seven and one-half grains of chloride of gold and chloride of sodium. I hardly think any one of the bottles sold, if carefully weighed, will carry out the amount claimed for them. As a general rule, there is more of the sodium than there is of the gold, and it would be better to use more than is generally recommended. I think in what is called the "liquid gold" you get your full amount.

The next question that was submitted to the Question Box for its consideration was:

*Why is not borax the best amateur toning bath?*

Well, that is a conundrum. I think the best toning bath for the amateur is the one he is accustomed to use. There is this objection to a borax toning bath, and that is, that if you use powdered borax in making it you are using something besides the baborate of soda.

The next question that was submitted to us is the following:

*Touching up negatives. How is it to be done practically, and is it within the powers of amateurs?*

The best way would be to go and take a few lessons of some good retoucher; and as to its being "in the powers of the amateur," I think anybody can do it to a certain extent, but it must be remembered of course that an amateur can accomplish a great deal in the line of successful work with care, patience, instruction, and perseverance.

The next question is:

*What is the cause and cure of pin-holes? Incidentally the same in reference to opaque spots in the gelatine of dry plates.*

One of the greatest causes of pin-holes is dust, and you cannot always get your dust off by using a camel's hair brush. Now some amateurs are in the habit of dusting their plates before they put them in the holders, and in one of the previous meetings when the subject of "Dont's" was under consideration here one evening, I said that it was a bad practice to dust them, because you set up a sort of electrical influence and attracted whatever dust there might be in the plate holder.

The safest plan is, simply in taking out the plates or inserting them in the first place to insert them in an inclining position, and in taking them out do it in the same way, and then gently blow over it, and, unless the dust is ground into the plate, which is the fault of the plate maker, you will experience very little difficulty with pin-holes.

The other part of the question is *incidentally in reference to opaque spots in the gelatine of dry plates.*

I think the most frequent and fertile cause of these spots is that in using a dry pyro that is not thoroughly mixed and dissolved in your developer, you will have a small particle of pyro touches the gelatine plate during development, which will produce a corresponding black spot on the gelatine plate.

I would like to hear from some of the other gentlemen in regard to these questions.

Mr. BEACH—It is so late, Mr. Chairman, that I think we had better adjourn the discussion until a subsequent meeting. I believe, however, Mr. Roosevelt has something to say.

Mr. ROOSEVELT—I think, with Mr. Beach, that we had better adjourn, but I will say a word before the motion to adjourn is put.

I could give some experience in reference to the same trouble, as I found the same striations in other plates. Some day, when the question of dry plates is under consideration, and the gentlemen here will be frank and open in narrating their experiences, I will do the same thing, and I will apply the names of the makers to the plates. I wanted to submit that question to the gentlemen, that is, to know whether, by any human possibility, the difficulties which I, and perhaps hundreds of others, have experienced in this direction, could be overcome. I had one plate that had almost a thousand pin-holes in it, and thought it was the worst plate in the world until I came across another, which I think had fifteen hundred in it (laughter). And one of the most unfortunate things in connection with pin-holes is that, when you are taking the picture of a lady friend for instance, and are trying to make a peculiarly admirable picture, those pin-holes will cluster around her face, and instead of filling her cheeks with dimples, will cover her with the most terrible looking blotches.

Dr. JANEWAY—Dust is not always the cause of these pin-holes. The plate makers may do that. If the plates are not cooled properly or regularly, that will produce pin holes also, and by the application of a glass or a microscope to these pin-holes you can easily see whether it is the cause of a failure in cooling regularly, or whether it is pin-holes caused by the dust. Some of the plate makers are notorious for the great number of pin-holes in their plates. Some of them have fifteen hundred and some two thousand pin-holes in them.

Mr. ROOSEVELT—Have bacteria anything



to do with it (laughter)? I saw an article in one of the papers attributing the whole trouble to bacteria, animalculæ and protoplasm.

Dr. JANEWAY—May be the bacillus of Dr. Koch has been transmitted over to us.

Mr. WALKER—I have a plate maker's name in my mind now, and I have held hundreds of plates up before the light, and I could see pin-holes in them before they were put into the plate holder at all. I held them up to see the pin-holes, and they were so bad that I discarded them and did not use them.

A Member—Don't he live in Philadelphia?

Mr. WALKER—It would not do to give his name. I have given his name once before, but it would not do to give it again.

Mr. ROOSEVELT—Before we adjourn, I would like to move a vote of thanks to Mr. Champney for the very interesting paper and exhibition which he has favored us with this evening.

Mr. BEACH—I second it.

The motion was then put and carried unanimously.

Mr. BEACH—Mr. Chairman, I move that the matter of discussing these questions on plates be postponed to a subsequent meeting, and that members in the meantime will collect all the peculiar plates which they come across and send them to the Chairman of the Question Box Committee, with the name of the maker of the plates on them, so that we may have a thorough discussion of the matter.

Dr. JANEWAY—Gentlemen, you have heard the motion. Is it seconded?

Mr. ROOSEVELT—I second it.

The motion was then put and carried. Adjourned shortly after 10 P.M.

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#### ENTERTAINMENT AND STEREOPTICON EXHIBITION AT ASSOCIATION HALL, NOVEMBER 18, 1886.

On the evening of November 18, at the above named hall, located on the corner of Twenty-third street and Fourth avenue, a very interesting entertainment occurred under the auspices of the Society.

Mr. L. P. Atkinson, President of the Brooklyn Harmonic Club, with four other members, furnished gratuitously some excellent instrumental music. The entertainment was opened by music, and the overture was so well received that an encore was demanded and gracefully acceded to.

Following this, President Beach spoke substantially as follows, respecting

#### AMATEUR PHOTOGRAPHY.

*Ladies and Gentlemen*,—In commencing the exercises this evening, a few words concerning amateur photography, its growth, its uses and its merits, may perhaps be of some interest to you.

The noticeable popularity of the art at the present time is due, no doubt, to two or three things; first, to the introduction into general use of the modern highly sensitive dry plate; second, the easy, simple and cleanly manipulations connected therewith; third, to the attractive, light and inexpensive apparatus furnished for taking the pictures.

By means of these modern facilities, the growth in the practice of the art has increased at a marvelous rate, until now hundreds enjoy it as a pastime, where formerly it was confined to a few scientific enthusiasts.

Among the varied applications of photography in the different branches of science, none excites a greater interest in the popular mind than the power to secure instantaneous pictures of moving objects.

So marked has this been, that an infinite variety of instruments are now supplied for more perfectly accomplishing the object.

To the tourist, photography serves a useful purpose in catching and retaining for him permanent and truthful records of his trip, forming pleasant reminders for future years.

To the artist, photography is particularly valuable, since it enables him to quickly obtain permanent impressions of things it would be difficult for him to depict upon his canvas.

To the historian, photography is useful in preserving accurate records of historical buildings, land-marks and battle-fields.

Within a recent period balloon photography has been developed, as regards its application to the obtaining of plan views of military fortifications for use in time of war.

As an amusement and recreation, there is nothing more beneficial to the mind and body than the practice of photography. It has the advantage of training the eye to a closer observation of all that is beautiful in nature, and at the same time cultivates the imagination.

So, as amateurs, we frequently trace out pictures, where, previous to our knowledge of the art, we had supposed they could not exist.

For the purpose of aiding the beginner and encouraging the practice of the art in this city, the Society of Amateur Photographers was organized on March 28, 1884, by a small number of leading amateur photographers. Permanent quarters were rented, and many conveniences for the use of members were provided.

But the popular interest in the subject became so marked, and the growth of the membership so rapid, that larger premises at 122 West Thirty-sixth street had to be secured.

Here are to be found ample facilities for every branch of amateur work, a large collection of amateur photographs, expensive photographic apparatus, an extensive library of photographic books, and comfortable club and meeting rooms.

In the brief period of two and three-quarter years, three photographic exhibitions and many meetings of a technical and interesting character have been held.

A number of new processes have been presented, accompanied by practical demonstrations, and many novelties in apparatus have been shown.

It will be the purpose of the society to encourage a higher degree of excellence in photography, to assist those who are learning it, and by means of photographic exhibitions, develop a higher standard of art.

We intend to show you this evening some of the results of modern English and American work, and trust it will be the means of encouraging many to take up this beautiful art.

Mr. Beach then introduced Mr. James S. Burdett, whose entrance on the stage was received with applause.

After explaining that he was not the *Burlington Hawkeye* Burdette, he gave a recitation on things in general, which evoked considerable laughter; then he imitated the man who comes in late at a large political mass meeting, and who cannot hear a word the speaker says. It proved to be very effective and amusing.

An interlude with music followed, after which Mr. Burdett concluded with a graphic recitation of the wreck of a train on the Union Pacific Railroad, and another amusing one on the question of "Jin'in Societies," etc.

Then Mr. Charles Barnard was introduced, the lights lowered, and the stereopticon exhibition began.

An immense screen was suspended above the stage, upon which was projected pictures 23 feet square. Mr. Barnard announced the subjects, making interesting and amusing comments as the pictures appeared. A series of 38 English pictures were first shown, many of which were exquisite for their remarkable clearness and fine technical skill, as well as their artistic merits. Following these were 22 choice American views, including some made by Dr. P. H. Mason, Mr. L. P. Atkinson, Mr. Alvey A. Adey, and Mr. James E. Brush. Every one elicited much admiration,

while their great size made one think the actual subject was before us.

As an exhibition of what amateurs can do when they try, it was voted to be extremely successful, and was highly appreciated by all present. Shortly after 10 o'clock the entertainment terminated.

It should be mentioned that the lanterns operated very smoothly, and were under the immediate supervision of Mr. A. D. Fisk.

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## PHOTOGRAPHIC SECTION OF THE AMERICAN INSTITUTE.

REGULAR MEETING, DECEMBER 7, 1886.

*President* H. J. NEWTON in the chair.

THE *Secretary* announced the receipt of the usual photographic journals contributed monthly to the Section.

The Chairman of the Executive Committee announced that the lecture of the evening would be given by Mr. P. G. Cusachs, President of the "Kit Kat Club;" and on the evening of January 4th, Professor D. L. Elmendorf, of the Institute for Deaf-Mutes, would entertain the Section by giving an illustrated lecture, entitled "A Trip Across the Continent."

The *President* then introduced Mr. Cusachs, who, for the rest of the evening, entertained the audience with his expert free-hand drawing, and quaint and amusing description of the customs and habits of the people of Catalonia. The lecture was novel in its construction, and dealt with numerous incidents seldom recorded in books.

The charming manner, as well as matter, of the discourse, exhibited artistic culture and social refinement, and hence drew from the audience frequent demonstrations of approval.

The lecture appeared to have all the elements of popularity; but it is doubtful if it could be made eminently so, except in the hands of its originator—for, like a well written play, its chief charm consists in its skillful representation. We forbear, therefore, giving more than this brief mention of it, and especially as the lecturer politely reserved the right (to himself) of publication.

A vote of thanks was tendered to Mr. Cusachs for his very instructive and entertaining discourse, and the great mass of the audience went away, no doubt, highly pleased; but it is also true that some few lagged behind to grumble because they failed to hear of some new developer, or to learn the exact number of grains of starch it requires to make an ounce of paste.

As your reporter was somewhat interested

in these criticisms, and though it is quite beyond his province to report more than what actually occurred during the meeting proper, he will venture to note here the substance of what was said by two of the chief disputants.

"Don't you think," said the first, "that there were a number of photographers here who will regard the lecture to-night, although a highly entertaining one, misplaced? Would it not be more *apropos* for the School of Art than the School of Photography?"

"It is very probable," said the second speaker, "there may have been some few of this class present. But the class you refer to are never satisfied except they can talk *shop* in all their public and social gatherings. They ignore photography in its æsthetic boundaries and its relation to other arts and sciences. How the study of art can help them to make better work they fail to see. Why artists and photographers should mingle in the same assembly, to them has no significance. In fact some even go so far as to declare that photography belongs only to the realm of science. This class fail to notice that the most praiseworthy photographers are artists rather than scientists, and to them are they indebted for the best examples of both portrait and landscape work. It is a good omen, therefore, when artists will meet on a common plane with photographers and acknowledge their indebtedness to this comparatively new art, while at the same time they stimulate photographers to a wider field of study and to higher social positions in the varied walks of life."

To night we have witnessed what, perhaps, has never occurred before in any photographic society—a union of artists and photographers in about equal numbers, and all apparently equally instructed and entertained. It is safe to conclude, therefore, that this first meeting will lead to the better acquaintance of these heretofore separated classes, and finally engender a brotherhood artists have been slow to acknowledge.

The Section, however, has no intention of abridging the privileges of any member, and while it would have its meetings as popular and entertaining as possible, it would not forget the practical and experimental phases of photography.

No doubt in the future, as in the past, a portion of the time will be set apart for the discussion of matters that interest photographers only, and for the exhibition of novelties pertaining strictly to the art. Believing that the greatest prosperity of the Section is

the chief desire of the Executive Committee, any suggestion that can increase its usefulness will no doubt be thoughtfully considered and, if feasible, submitted to practical test.

### THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.

A STATED meeting of the Society was held on Wednesday evening, December 1, 1886, with the *President*, Mr. FREDERIC GRAFF, in the chair.

The *Secretary* reported the resignations of Edgar P. Earle, Dr. John G. Lee, and Professor W. D. Holmes, which were duly accepted.

The Committee on Membership reported the election of the following active members: Messrs. Clarence B. Moore, Henry H. Suplee, and Charles P. Sinnickson.

Nominations for officers and committees for 1887 were then made.

Mr. JOHN SARTAIN, in charge of the Art Department of the forthcoming American Exhibition in London, called attention to the enterprise, and to the circular in regard thereto which had been mailed to the members. He stated that it was intended that a prominent position should be given to photographs, and that many fine exhibits had already been promised by eminent photographers in various parts of the country. He was anxious to have Philadelphia well and fully represented, and particularly desirous that the Photographic Society should make a good display. He asked the earnest consideration of the matter by the members, in order that steps might be taken in good time to send exhibits either in the name of the society or by the members individually.

Mr. G. C. MORRIS moved that action be deferred until the next meeting, in order that an opportunity should be afforded the members to give the subject due consideration. Carried.

Mr. JOHN G. BULLOCK moved that the society give a public exhibition of lantern slides during the month of January, and that a committee be appointed, with power to act, to make the necessary arrangements for such an exhibition. Carried.

The Chair appointed Messrs. W. H. Rau, Frank Bement, and Galloway C. Morris on this committee.

The paper for the evening was read by Mr. W. H. Walmsley, his subject being "Photomicrography." [See page 749.]

Mr. BEMENT asked whether the apparatus shown by Mr. Walmsley was adapted to pho-



tographing opaque objects, stating that he had endeavored to photograph some gold crystals, but had no success.

Mr. MORRIS thought that the difficulty was owing to the color of the object. The form of the crystals was very beautiful, but it would probably be almost impossible to photograph them.

Mr. CARBUTT suggested a trial with orthochromatic plates.

Mr. WOOD showed a negative on a  $6\frac{1}{2} \times 8\frac{1}{2}$  plate, which had been enlarged to  $8 \times 10$ . It was a film negative, which had accidentally fallen into his waste bucket. When found it had increased in size to the above dimensions. Removing it from the bucket, he transferred it to a glass plate. The expansion had been very uniform, but in drying the film had been torn in several places from the contraction of the gelatine skin on which the negative had previously been mounted.

He also suggested a simple plan for reproducing negatives from silver prints, which consisted in making the print translucent by any of the processes used with paper negatives, and from it making a second print, which, being rendered translucent, could be used as a paper negative. One advantage he claimed was in being able to shade certain parts in printing both the positive and the second negative, so that the latter should be an improvement on the original.

Mr. CARBUTT thought it would be better to use a gelatine plate for the second negative.

Adjourned. ROBERT S. REDFIELD.  
Secretary.

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## Bibliography.

THE following notices are of books that have been upon our editorial table for some time, but until now we have not had an opportunity to find a place for them in our columns, owing to the pressure of other matters,

TRAITE PRATIQUE DE PEINTURE ET DORURE  
SUR VERRE. Par E. Godard. Paris:  
Gauthier-Villars.

This is a small octavo volume of about sixty pages, giving instructions for the painting and decoration of glass by the use of light and the methods of photography. The author states that he has employed the methods he describes, and if his directions are followed success is assured. In a series of articles the author gives the most convenient arrangement of the atelier, and the furnace and other apparatus with which it is to be furnished; the papers and other materials to produce the positives; the chemicals

used to vitrify the pictures; the preparation of the sensitive solutions; the application of these solutions to the glass; the exposure to light; the development of the image; elimination of bichromate from the film and the fixing of the color on the glass; the employment of fixing baths; burning the glasses; retouching; enamels; manner of working with glass that is not to be burnt; impressions on linen, metal, and fayence; and finally an account of difficulties to be met with. The details of the various operations are well described, and many formulas are given to suit the various kinds of work undertaken. Altogether the book bears evidence as coming from a practical hand, and we should think it a handy guide to those who are working upon the decoration of glass.

GUIDE PRATIQUE DU PHOTOGRAPHE AMATEUR. Par G. Vieuille. Paris: Gauthier-Villars.

This is another of those admirable little manuals published by the Messrs. Gauthier. Villars in the series of the *Bibliothèque Photographique*. It is a small volume of about one hundred octavo pages, written in a plain and simple manner and destined for the amateur photographer. It gives a chapter on the apparatus and lenses needed by the beginner, including a description of the dark room and its furnishings. Then follows a chapter on negatives of various kinds and the methods of obtaining them. There is a chapter on portraits, another on retouching, and another on positives, including silver prints, platinum prints, the mounting of prints, and transparencies. In an appendix is found a brief account of the old wet plate process. While the volume is admirable in arrangement and well written, we do not think it is any better than many of the useful little manuals to be found in the English language. Nevertheless, if our French readers wish a good little hand-book for an amateur photographer, the volume before us is all he will need as an introduction to our art.

PHOTOGRAPHY IN THE STUDIO AND IN THE FIELD. By E. M. Estabrooke, author of "The Ferrotype and How to Use It." New York, E. & H. T. Anthony & Co.

This last addition to Anthony's Photo Series is one of the best of that admirable collection of photographic manuals. The author of the present volume is a gentleman thoroughly well known to photographers by his excellent little book upon the ferrotype, which has had larger editions than almost any other volume of the same character. In the treatise before us he shows his thoroughly practical

knowledge of photographic processes acquired during his travels through the United States as a demonstrator of dry plates. The experience thus obtained is embodied in the pages before us in language at once plain and accurate, yet with an amount of detail in regard to modern methods of procedure that we have not found elsewhere. In 240 small octavo pages are found a thoroughly practical discussion of the collodion process in all its details, and the gelatine emulsion process in its most modern developments. The spirit of the whole volume is well exhibited in the following words of the author in his introductory remarks:

"In getting up this work I have availed myself of information from any and all sources at my command, giving credit where possible, endeavoring to make everything understandable, and neglecting no details necessary to the successful working of every formula, even by the youngest learner."

From a very careful perusal of the work we are satisfied that Mr. Estabrooke has fully acted up to the above propositions, the result of which is a practical manual of photography useful alike to both professional and amateur photographers, and embodying the author's large experience amongst both these classes of workers.

## **U. S. Patents.**

No. 346,199. Portable Photographic Camera. Robert D. Gray, New York. Filed September 15, 1885. Issued June 29, 1886.

No. 346,224. Composition for Holding Photographic Paper on its Support. T. C. Roche, Brooklyn, N. Y. Filed October 28, 1885. Issued June 29, 1886.

No. 346,392. Photographic Plate Holder, P. H. Wheeler, Washington D. C. Filed September 24, 1883. Issued June 29, 1886.

No. 346,353. Photographic Paper Box. Washington Boyce, Danville, Ill. Filed July 9, 1885. Issued June 29, 1886.

No. 344,648. Method of Producing Impressions in Line or Stipple from Photographic Negatives. John Gast, Brooklyn, N. Y. Filed June 26, 1885. Issued June 29, 1886.

No. 344,781. Process of Burnishing Unmounted Multiple Photographic Sheets. Orrin L. Hulbert, St. Louis, Mo. Filed December 26, 1885. Issued June 29, 1886.

No. 345,220. Graphic Negative Film for Photographic Printing. Stephen C. Duval, New York. Filed July 11, 1885. Issued July 6, 1886.

No. 345,331. Machine for Manufacturing Photographic Dry Plates. Freelan O. Stanley, Lewiston, Maine, and Frank E. Stanley, Auburn, Me. Filed August 27, 1885. Issued July 13, 1886.

No. 345,871. Pan for the use of Photographers. W. Irving Adams, Montclair, N. J. Filed March 15, 1886. Issued July 20, 1886.

No. 345,949. Camera Stand. Robert A. Bourne, Altoona, Pa. Filed December 31, 1885. Issued July 20, 1886.

No. 345,753. Process of Photographic Printing. Redfield B. West, Guilford, Conn. Filed June 1, 1885. Issued July 20, 1886.

No. 345,938. Process of Photographic Printing. Redfield B. West, Guilford, Conn. Filed January 9, 1886. Issued July 20, 1886.

No. 346,546. Adjustable Plate Holder for Photographic Cameras. Mark E. Hawks, West Union, Iowa. Filed June 10, 1885. Issued August 3, 1886.

No. 347,292. Automatic Register for Photographic Printing Frames. W. F. Guthrie and N. C. Peterson, Minneapolis, Minn. Filed December 24, 1885. Issued August 10, 1886.

No. 347,451. Photographic Camera. Olof Waring, Christiania, Norway. Filed January 16, 1886. Issued August 17, 1886.

No. 348,712. Photographic Camera. Eratus B. Barker, New York. Filed March 9, 1886. Issued September 7, 1886.

No. 349,133. Photographic Camera. Richard A. Anthony and W. H. Lewis, New York. Filed October 20, 1885. Issued September 14, 1886.

No. 350,315. Portable Photographic Camera. Scotto C. Nash, Harrisburg, Pa. Filed January 2, 1886. Issued October 5, 1886.

No. 350,682. Photographic Camera. John S. Johnston, New York, N. Y. Filed June 6, 1885. Issued October 12, 1886.

No. 351,108. Photo-Chronograph. John J. Higgins, New York, N. Y. Filed February 12, 1886. Issued October 19, 1886.

No. 351,532. Camera Obscura. T. Sharp and H. E. Blake, North Adams, Mass. Filed October 14, 1885. Issued October 26, 1886.

No. 351,853. Photographic Camera Attachment. F. Collins, St. Joseph, Michigan. Filed January 5, 1886. Issued November 2, 1886.

- No. 352,098. Photographic Camera Shutter. C. Prosch. Filed December 14, 1885. Issued November 2, 1886.
- No. 353,326—Photograph or Card Holder. Jean Pettermann, Offenbach-on-the-Maine. Filed January 20, 1886. Issued November 30, 1886.
- No. 353,463—Photo Developing Box. William H. Lewis. Filed May 26, 1886. Issued November 30, 1886.
- No. 353,545. Detective Camera. George Eastman & F. M. Cossitt, Rochester, N. Y. Filed March 1, 1886. Issued November 30, 1886.
- No. 353,849. Photographic Print Washer. W. G. Entekin, Philadelphia, Pa. Filed May 14, 1886. Issued December 7, 1886.
- No. 353,856. Camera Stand. John J. Higgins, New York. Filed April 30, 1886. Issued December 7, 1886.
- No. 354,259. Photographer's Chair. James H. Smith, Chicago, Ill. Filed March 26, 1886. Issued December 14, 1886.
- No. 354,344. Apparatus for Washing Photographic Dry Plates. H. Clay Price. Filed June 8, 1886. Issued December 14, 1886.

## What Our Friends Would Like to Know.

*N. B.—We cannot undertake to answer questions of a technical character except through the columns of the BULLETIN. Correspondents will please remember this.*

Q.—J. W. G. writes: I send inclosed a picture of a friend, asking if you will be kind enough to tell me, through the BULLETIN, what the cause of the spots are in the negative? I have never met such before.

A.—We cannot see any spots on the picture, but it is exceedingly flat owing to bad lighting. The shadows are as highly illuminated as the lights, hence the flat, deathly appearance.

Q.—W. H. B. writes: Will you please give me, in the BULLETIN, the chemical reaction produced by floating paper coated with a solution of white lac and gelatine upon a solution of ammonium chloride and magnesium lactate? What function does the lactate perform in the subsequent process of floating on the ordinary silver bath?

A.—We do not know of any definite chemical reaction that takes place under the above circumstances. This appears to be the old Courtney process, and the lactate was supposed

to help the toning of the prints; but it is of doubtful utility.

Q.—INQUIRER writes: I am troubled with measles; can you help me? My bath was made last April as follows: 64 oz. water, 6 oz. nitrate silver,  $1\frac{1}{2}$  oz. nitrate ammonium,  $\frac{3}{4}$  oz. nitrate magnesium, 64 drops ammonia. For every 10 sheets of paper silvered, 80 grains of silver have been added, and ammonia as required to keep it alkaline. In October, the paper began to show measles. The bath had decreased to perhaps 40 oz. Twenty oz. were added, mixed as above, and it worked well again. Now it is commencing to make trouble. A few days ago I silvered paper and printed half of it successfully; the next day I fumed and printed the rest of it. Every piece was full of measles. I tried fuming longer, fuming in a warmer room, etc., but could detect no difference in the results. I use N. P. A. paper, and float about  $1\frac{1}{4}$  to  $1\frac{1}{2}$  minutes. The bath is clear.

A.—There are several reasons for your want of success. In the first place we think your paper has been chilled, either before silvering or after, which would cause the measly appearance in the samples sent. Secondly, the paper appears to have been imperfectly fumed, either too weak ammonia or not long enough in fuming box. We recently noted just such a result from two pieces of paper that overlapped in fuming box. Lastly, we think the silver bath is much too weak, especially for cold weather. Sixty-five grains to the ounce is best in winter.

Q.—R. D. L. writes: Will you please tell me how to proceed to make negatives by magnesium or other artificial light, where electric light is not to be had.

A.—Consult Dr. Vogel's German letter in the BULLETIN for September 25, 1886, page 548, and also answer to G. H. L. in last issue of this journal, page 735.

Q.—AMATEUR writes: Please tell me how I can make a collodion positive plate so that I can print a positive from a positive (contact). One of the ingredients, I think, is bichromate of potassium. Or give me the title of a book giving same.

A.—Use collodio-bromide emulsion; expose under a negative and develop in the ordinary way. Don't fix the plate in hypo, but treat it with dilute nitric acid, after first washing off the developer. The acid will dissolve the metallic silver of the image and leave the undeveloped bromide. Wash well, expose again to light, and develop. The result will be a positive.



Q.—R. G. B. writes: Can a  $6\frac{1}{2}$  by  $8\frac{1}{2}$  camera be used for making 5 x 8 stereoscopic views?

A.—Yes. Use a partition in the camera and a 5 x 8 kit in your plate holder.

Q.—S. O. B. writes: I am troubled occasionally with black spots on some of my pictures, like sample inclosed. Can you tell me the cause? In a dozen sheets (silvered) I will get a sheet or two which makes a few prints like this one. Silver solution, 50 grains to ounce, floated two minutes and fumed half an hour. N. P. A. extra brilliant paper.

A.—This is evidently a case of pyro dust settling on the paper. Too much care cannot be exercised to prevent this. Pyro is so light that it should never be handled in a room where albumen paper is kept or used before printing.

Q.—J. S. writes: Inclosed find a piece of paper I silvered yesterday. What caused those metallic spots? My bath was made up according to O'Neill's formula, and I have used it about four months. I silver twice a week and keep my bath in the sun all the time. I have been troubled frequently with the same kind of spots, and would use sal or bicarb. soda in the bath, pouring in about half an ounce saturated solution to half gallon of bath, but this time it did no good.

A.—This appears to be exactly like the case of the preceding inquirer, S. O. B., and we refer our correspondent to the answer there given. The appearance of the spots is exactly the same.

*To the Editors.*

In the BULLETIN for November 27th, your correspondent A. W. M. asks for information concerning "Webster's Elastic Cement." I

do not know that my information will be of much value to him, but I give it for what it is worth. The article in question is probably the same which some years ago was manufactured under that name in Cambridgeport, Mass., and it was a very good roofing cement. I do not know whether or not it is still manufactured.

W. H. BURBANK.

[Whiting & Son, Cambridgeport, write us to the same effect.—EDS.]

## Views Caught with the Drop Shutter.

Dr. EDWARD L. WILSON delivered a lecture at Chickering Hall, New York, on Dec. 20th, on "The Finding of the Pharaohs," which was illustrated. The entertainment was for the benefit of the New York Training School for Nurses, in connection with the Post-Graduate Medical School and Hospital.

W. R. HOWELLS, formerly of New York, and whose skill in artistic photography is not excelled, has recently opened a studio in Washington, D. C., which he has fitted up with Dallmeyer lenses and the best apparatus from the factories of our publishers. This gentleman was the author of those handsome pictures, Howells' Studies, that were so much admired at one time, and his success in the capital city is assured.

PROFESSOR MASON, of Troy Polytechnic Institute, has been experimenting upon boiler explosions, and taking photographs of the fragments. He proposes to make instantaneous pictures at the moment of rupture.

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